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TEXTILE WORLD RECORD

LORD & NAGLE COMPANY · Boston & Philadelphia

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The Annual Report of New Mill Construction for 1906 is Contained in This Number.

The Textile-Finishing Machinery Co.

17 EXCHANGE PLACE, PROVIDENCE, R. I.

Singeing Machines,

Boiling Kiers,

Washers, Squeezers,

Chemic and Sour

Rusden Patent

Continuous Chainless

Steamer,

Aniline Agers,

Dyeing Machines,

Open Soapers,

Blanket Washers,

Color Kettles,

Horizontal or Vertical Drying Machines, with Copper or Tinned Iron Cylinders,

Automatic Tentering Machines,

Water and Starch Mangles,

Dampening Machines,

Dyeing Machines for Chain Warps.

BUILDERS OF ALL KINDS OF

MACHINERY

FOR

BLEACHING
DYEING
DRYING

AND

FINISHING

Calenders for Rolling, Glazing, Chasing and Embossing, also Calenders for Moire Finish.

Sole Manufacturers of Patented Flexible Cloth Expander for Cylinder Drying Machines, Calenders, Mangles, &c.

Patent Combination Rolls Made of Cotton and Husk, especially adapted for Soft Finish, Unequalled for Elasticity and Durability.

Cotton, Paper, Husk, Chilled Iron, Brass and Rubber Rolls, Electro-deposited Copper Rolls for all Purposes.

Padding and Drying Machines for Shade Cloths.

Single and Double Cylinder Engines.

Hydraulic Presses and Pumps.

Mercerizing Machinery for Piece Goods and Yarn in the Warp or Chain

ALL KINDS OF OUTFITS FOR BLEACHING THREAD AND SOFT TWISTED YARN.
BLEACHING MACHINERY FOR YARNS IN THE WARP OR CHAIN.

Estimates, Drawings and full particulars of complete plants furnished on application.

Southern Agent, STUART W. CRAMER, Trust Bldg., Charlotte, N. C., Equitable Bldg, Atlanta, Ga.

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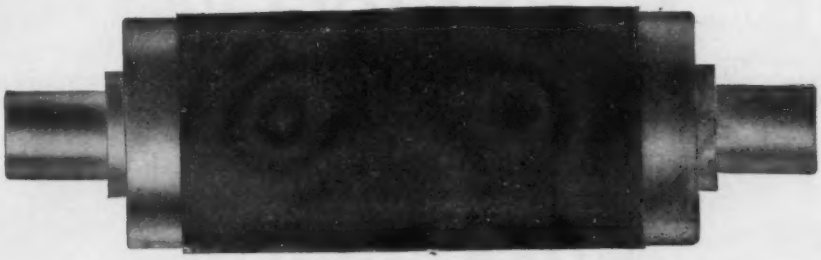
Calender and Mangle Rolls



COTTON

PAPER (LINEN, COTTON OR MANILLA)

FELT PAPER

COMBINATION (COTTON AND HUSK)

COMBINATION (COTTON AND EXCELSIOR)
PATENTED

HUSK

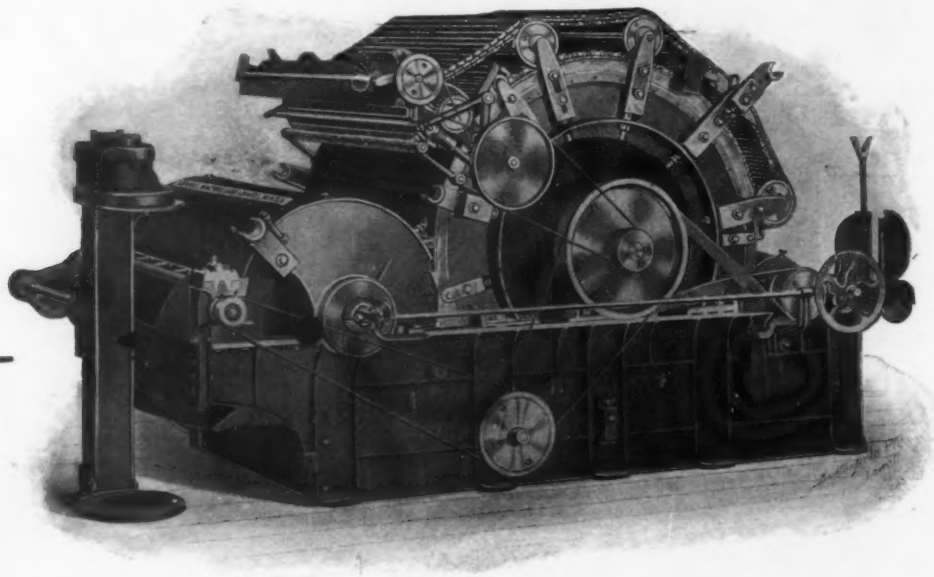
FIBRE

BRASS CHILLED IRON RUBBER

H. W. BUTTERWORTH & SONS CO.

PHILADELPHIA, PA.

BLEACHING, DYEING, DRYING AND FINISHING MACHINERY FOR SILK, COTTON AND WORSTED FABRICS.



Cotton and Worsted Machinery

With Modifications to Suit Any Class of Work.

Cotton Machinery: Cards, Railway Heads, Drawing Frames, Fly Frames, Speeders, Ring Spinning Frames, Twisters, Spoolers, Reels, Warpers, Slashers, Winders, Looms, Shearing Machines, Balling Machines, Folders, Stamping Machines, Sewing Machines, Size Pumps, Size Kettles, Drawing-in Frames, Baling Presses, Indigo Grinders.

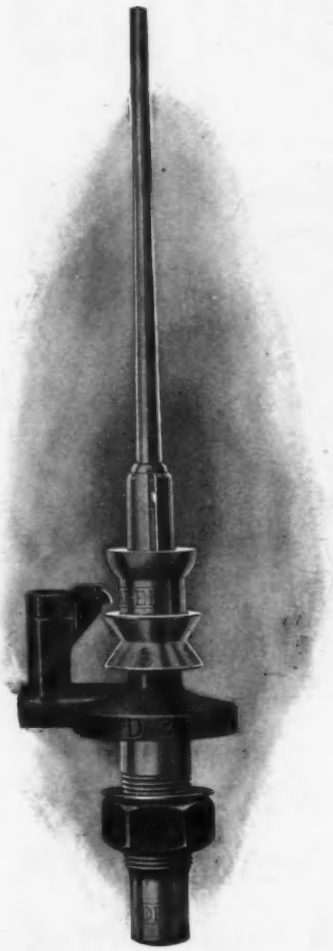
Worsted Machinery: Spinning Frames with caps, rings or flyers, Dandy Rovers and Reducers, Cone Second Finishers, Reducers and Rovers, Gill Boxes for Drawing, Preparing and Finishing, Weigh Boxes and Drawing Boxes, Cap Trap, Flyer and Ring Twisters.

Plans, Specifications and Estimates furnished upon application.

Lowell Machine Shop

LOWELL, MASS.

A New Spindle Improvement



The Rabbeth Centrifugal Bobbin Clutch.

Fits the Bobbin loosely when at rest—allows considerable variation in fit.

Bobbins will all go down into place and Traverse can be lengthened.

Allows easier and quicker doffing — stronger bobbins — less reaming.

Draper Company, Hopedale, Mass.

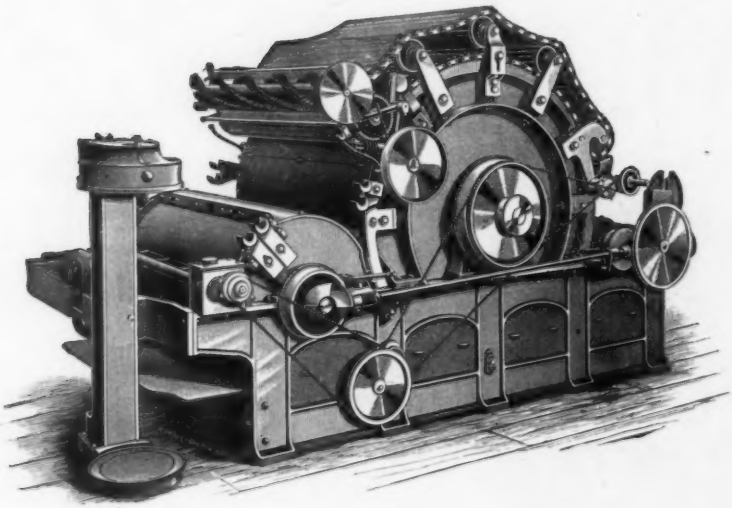
We Also Build Looms.

Cotton Machinery

MASON MACHINE WORKS,

TAUNTON, MASS.

Southern Office,
Charlotte,
N. C.



Cards,
Combers, Railway
Heads, Drawing Frames
Spinning Frames, Mules and Looms

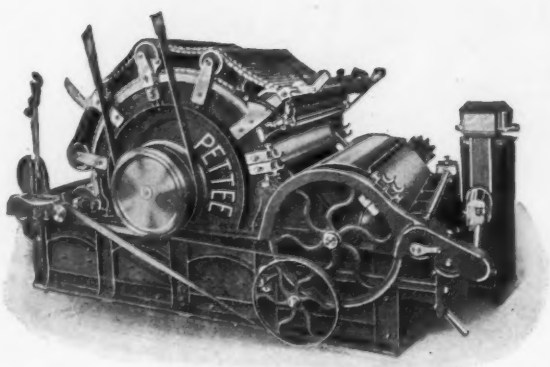
INCLUDING

Plain and Fancy Silk Looms

Saco and Pettee Machine Shops

NEWTON UPPER FALLS, MASS., U. S. A.

COTTON MACHINERY



Pickers,
Revolving
Flat Cards,
Drawing
Frames,
Railway Heads,
Slubbing,
Intermediate
and
Roving
Frames,
Spinning Frames,
Spoolers
and
Reels.

Shops—

Biddeford, Me.

Newton Upper Falls, Mass.

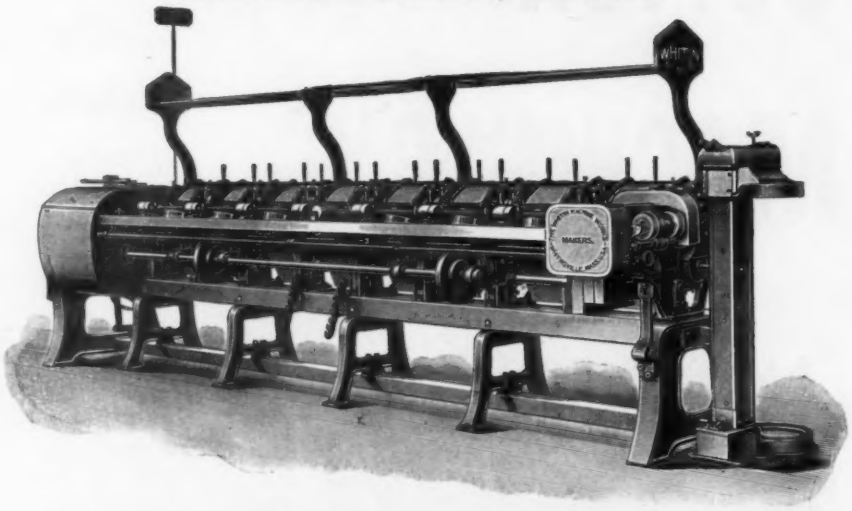
Southern Agent, A. H. WASHBURN, Charlotte, N. C.

THE

WHITIN MACHINE WORKS,

Cotton Machinery

WHITINSVILLE, MASS.



HIGH SPEED COMBER 1906 MODEL.

Revolving Flat Carding Engines,
Sliver Lap Machines,
Ribbon Lap Machines, Combers,
Railway Heads, Drawing Frames,
Spinning Frames, Spoolers, Twisters,
Long Chain Quilling Machines, Reels, Looms.

Southern Agent,
S. W. CRAMER

Trust Building, CHARLOTTE, N. C.
Equitable Building, ATLANTA, GA.

"Kitson Products"

Blowing Systems

For Conveying Bale Cotton
from Storehouse to Picker-room

Self-Feeding Openers
Lappers and
Cleaning Trunks

Waste-Working Machinery

Raw Stock Cotton Dryers

We own the Patterns and can furnish REPAIR PARTS for PICKERS
formerly built by

WHITEHEAD & ATHERTON, . Lowell, Mass.
ATHERTON MACHINE CO., - - Lowell, Mass.
A. T. ATHERTON MACHINE CO., Pawtucket, R. I.

Kitson Machine Shop

Lowell, Mass.

SCOTT & WILLIAMS

2079 E. Cumberland Street, Philadelphia, Pa., U. S. A.

BUILDERS OF

Full Particulars, Samples and Special Catalogues on Application.

Rib Knitting Machinery for Underwear and Hosiery

Plain, Single Lever or with Welt, Slack Course and Automatic Slackening Device for Welt.

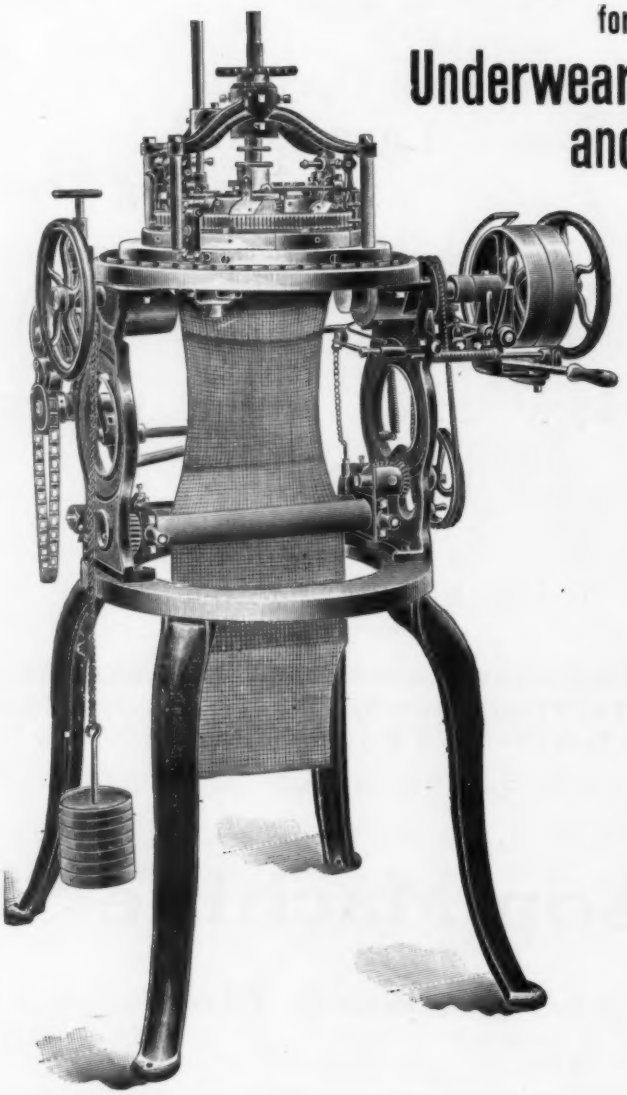
Improved Measuring Device, by actual length knit.

Sizes 8 to 24 inches, inclusive, varying by one inch.

Number of Feeds, 4 to 12, according to style and diameter of machine.

Solid Forged Steel Cylinders, specially hardened or with patent inserted walls for fine fabric.

Special Machinery for Sweaters, etc.



The illustration shows our

Improved High Speed Single Lever Automatic Ribbed Underwear Machine

for making ladies' and gents' ribbed underwear, union suits, etc., plain and shaped.

We build Loopers, Ribbers and other Machinery for Knitting Mills

As well as

A Complete Line of Full Automatic and 7-8 Automatic Seamless Hosiery Machinery.

For Knitting Machines Using Automatic Stop Motions

No catching on the surface with wool, worsted, mercerized cotton, silk, or backing yarns.

Wound by a Self Oiling Thoroughly Tested Machine.

High speed machines for all classes of winding made with interchangeable parts throughout.

Universal Winding Co., Boston, Mass.

Shuttles for all Textile purposes and Sundry Special Loom devices

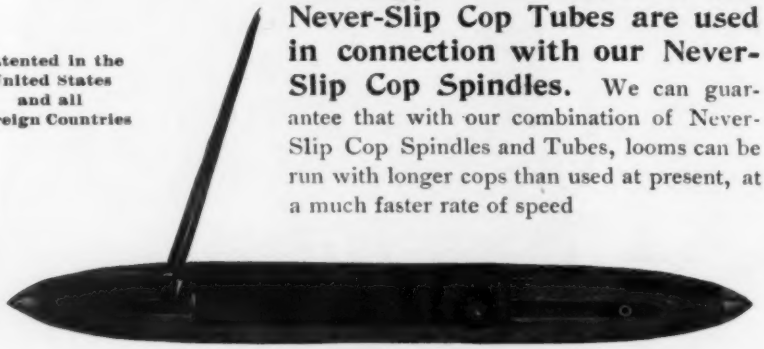
Never-Slip Cop Spindles and Tubes

Never-Slip Cop Tube

Patent applied for

Filling-Waste is reduced to nothing and long Cops will only be a success if our Never-Slip Cop Tubes are used in connection with our Never-Slip Cop Spindles. We can guarantee that with our combination of Never-Slip Cop Spindles and Tubes, looms can be run with longer cops than used at present, at a much faster rate of speed

Patented in the United States and all Foreign Countries



Shuttle with Spindle Raised

U. S. Patents: 778851, Jan. 3, 1905; 790611, May 23, 1905; other patents pending

Shuttle with Spindle Lowered.

U. S. Patents: 778851, Jan. 3, 1905; 79611, May 23, 1905; other patents pending

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American Textile Specialty Machinery Co.

363-373 Rider Avenue, New York City

NEAR MOTT AVENUE SUBWAY STATION

Electric and Automatic

Warp Stop Motion for Silk, Wool and Cotton

Simplicity! *Perfection!*

EVAN ARTHUR LEIGH

232 Summer Street (opposite the South Station), Boston, Mass.

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IN THE UNITED STATES AND CANADA FOR

Platt Bros. & Co., Ltd.

BY FAR THE LARGEST MAKERS IN THE WORLD OF

Cotton, Woolen and Worsted Machinery

Platt's Patent Opening and Picking Machinery.
Platt's Cotton Comber will comb from 7-8" stock to Sea Islands.
Platt's Special Machinery for Making Cotton Waste into Yarns.
Platt's Special Machinery for Making French Worsted Yarns.
Platt's Woolen and Worsted Carding Engines, Special Designs.
Platt's Cotton, Cotton Waste, Woolen and Worsted Mules.

MATHER & PLATT, LTD.

Dyeing and Finishing Machinery.
Archbutt-Deeley System for purifying and softening water.

TEXTILE MACHINERY ASSOCIATION, LTD.

Flax, Hemp and Jute Machinery.

GEORGE HODGSON, LTD.

Looms for Worsteds, etc.

THE PATENT AUTOMATIC FEEDING MACH. CO., LTD.

Patent Feeding Machines for wool, cotton, flax, fur and fibrous material.

JOSEPH SYKES BROS.,
Card Clothing for Cotton.

JAMES CRITCHLEY & SON'S,
Card Clothing for Woolen and Worsted.

DRONSFIELD BROS'.

Grinding Machinery and Emery Filleting. The Best French and English Combing and Rubbing Aprons. Harding's Pins and Circles. Varey's Fallers, etc.

Jacob K. Altemus is

Able to supply the best

Cop Winding Machinery

Or Hosiery Winders and more in particular

Bobbin Winders,

Keep in mind that I

Always produce machines that are right

Letting nothing go out

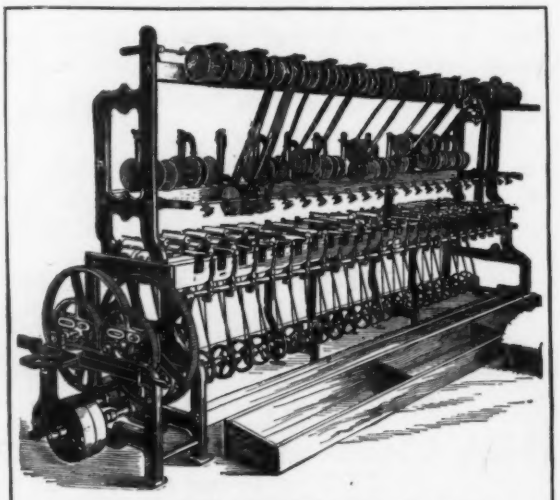
That is not satisfactory before delivery.

Every

Manufacturer should investigate warping and beaming machinery, warp splitting as well,

Upright Spoolers, Quillers, Warpers, Twisters, etc.

Send for full information and prices.



The Greatest Bobbin Winder for Skeins Ever Built.

Textile Machinery

2824 N. 4th St., Philadelphia, Pa,

THESE

Water Towers

Are furnished by

Tippett & Wood

They provide a storage for water under pressure, and are valuable for fire protection and personal uses

The T. & W. Towers do not fall or leak.

All Sizes Built

Plans and prices given on application.

Address

Tippett & Wood

Phillipsburg, N. J.

HARWOOD'S MACHINERY

Increases Production, Improves Quality, Decreases Labor Cost.

THE BRAMWELL SELF-WEIGHING FEEDER,

For Woolen, Worsted, Hosiery and Shoddy Cards and Garnett Machines.

We began introducing this feeder more than twenty years ago and its use is now practically universal. Many other types and makes have been tried and discarded, but the Bramwell, in its improved and up-to-date form, is now recognized everywhere as the most perfect feeder and only complete feeding machine in the world.

Our long experience has proved conclusively that where evenness is required—determined by weighing—our weighing feature is absolutely indispensable. Several attempts have been made to introduce feeding machines ignoring this principle, but none have succeeded.

We have made a careful study of all phases of the feeding problem and by adaptations and modifications of the Bramwell Feeder to meet the particular conditions, are prepared to feed evenly all kinds of stock from rabbit's fur to jute tow, including shoddy, cotton, fine wool, mixtures, fine and coarse worsted, flax tow, long worsted and all other kinds of stock.

Call on us for particulars and information about all matters relating to Feeding Machinery.

GEORGE S. HARWOOD & SON,

53 State Street, Boston, Mass.

Cloth Washers, Dye Tubs, Vats, Fulling Mills,
Piece Dyeing Machines, Special Machinery,
Brass Founders, Tanks, To Order.

Hopkins Machine Works, Inc.

BRIDGETON, R. I.

Providence Office, 49 Westminster St.

Spindles and Flyers, for Cotton, Wool, Silk, Flax, etc.

Send for our latest Catalogue and Price List

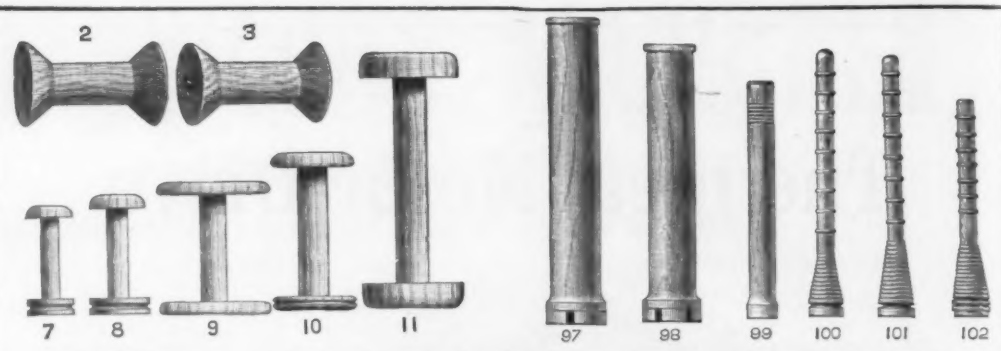
Dye Tub Valves, Cloth Guides, etc. Bronze or Porcelain Rings.

The Ideal Motor Drive

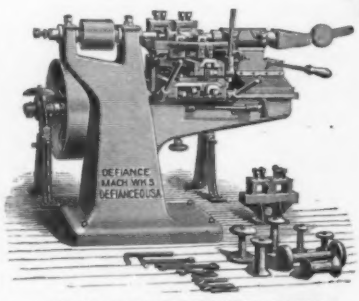
A New Process Noiseless Pinion
and an Accurately Cut Metal Gear

We make them both. Write for Catalogue.

THE NEW PROCESS RAW HIDE CO.
SYRACUSE, N. Y.



SPOOL AND BOBBIN MACHINERY



AUTOMATIC SPOOL TURNING LATHE

Complete Equipment
OF THE
MOST MODERN TOOLS
25% SAVED
Over the Old Methods
Send for Catalogue and Particulars to
THE
Defiance Machine Works,
DEFIANCE, OHIO

AUTOMATIC BOBBIN LATHE

The Jackson Belt Lacer

will lace a 6-inch belt complete in less than three minutes.

How nearly can you duplicate this by any other method?

It costs a cent to lace a 5-inch belt; larger belts in proportion.

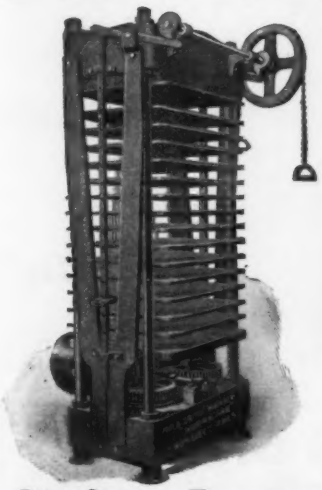
We use coil wire lacing; the belt can be connected or disconnected, shortened or lengthened in a few seconds, and the joint is just as pliable as any other part of the belt.

1,900 lbs. tensile strain has failed to break it or pull it apart.

Isn't it worth investigating?
Send for catalog.

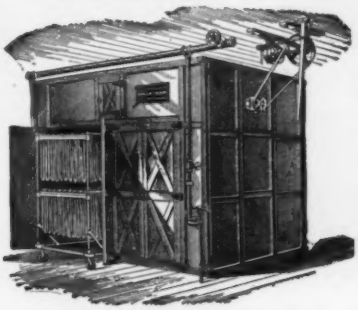
Birdsboro Steel Foundry & Machine Co.
Birdsboro, Pennsylvania.

"HURRICANE" DRYERS AND FANS



Power Screw, Hydraulic and Lever **Presses**

For Wool, Cotton Stock, Yarn, Stockings, Underwear, Etc.



Truck Yarn Dryer.

BELT DRIVEN AND MOTOR DRIVEN

"Hurricane" Fan, Style No. 2. Write for Catalogues.

COMPLETE EQUIPMENTS FOR DYEING, SCOURING, BLEACHING, CARBONIZING, OXIDIZING, CHROMING, Etc.

PHILADELPHIA DRYING MACHINERY CO.

6721 Germantown Ave., Philadelphia, Pa.

Fairbairn Lawson Combe Barbour, Ltd.

Lawson Branch

Hope Foundry. **Leeds, England**

MAKERS OF MACHINERY FOR

Preparing and Spinning

Flax, Hemp, Tow and Jute

Special Machinery

for the Manufacture of

Twines, Rope Yarns and Binder Twine

Good's Combined Hackllng and Spreading Machine.

Long Reach Screw-Gill Drawing Frames. Chain-Gill Drawing Frames with Apron Heads.

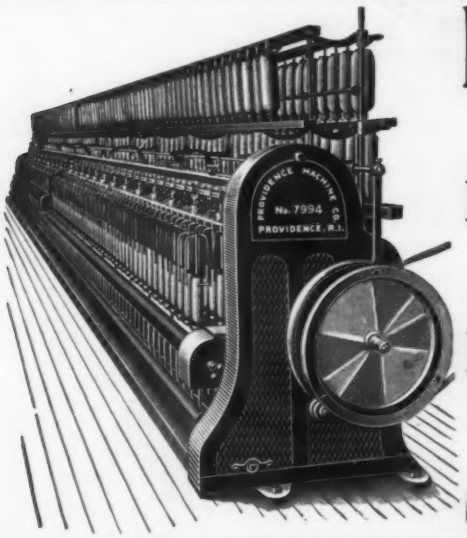
Patent High-Speed Horizontal and Automatic Spinning Frames for Manila.

Improved Laying Machines.

Haskell-Dawes Tubing Twisters.

Brownell's Patent Twisting and Laying Machines for Twine.

Complete Plans ond Estimates for Flax, Tow, Hemp and Jute Mills, Trawl Twine Factories and Steam Ropeworks.



Providence Machine Co.

Manufacturers of

Improved Cotton Roving Frames

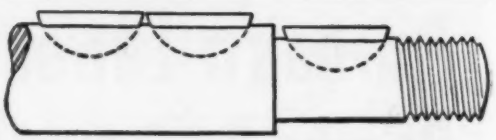
Improved Worsted Roving Frames

564 Eddy St., - - PROVIDENCE, R. I.

REVOLVING FLAT CARD BRUSHES

S. A. Felton & Son Co. FOR USE ON ALL MAKES OF REVOLVING FLAT CARDS Manchester, N.H.

Key Seating Attachment FOR Whiton Gear Cutter



We offer an attachment for use with our Gear Cutting Machine, to cut key seats for the Woodruff System of Keying. Write for description, circulars and price.

THE D. E. WHITON MACHINE CO.,
19 Oak Street, New London, Conn.

THE L. M. BOWES COMPANY,

Every Description of Fine Leather for Textile Use.

SOLE AGENTS IN THE UNITED STATES FOR

CHARLES CAIN, SON & GREENWOOD,
HALIFAX, ENGLAND.

MAKERS OF HIGH GRADE

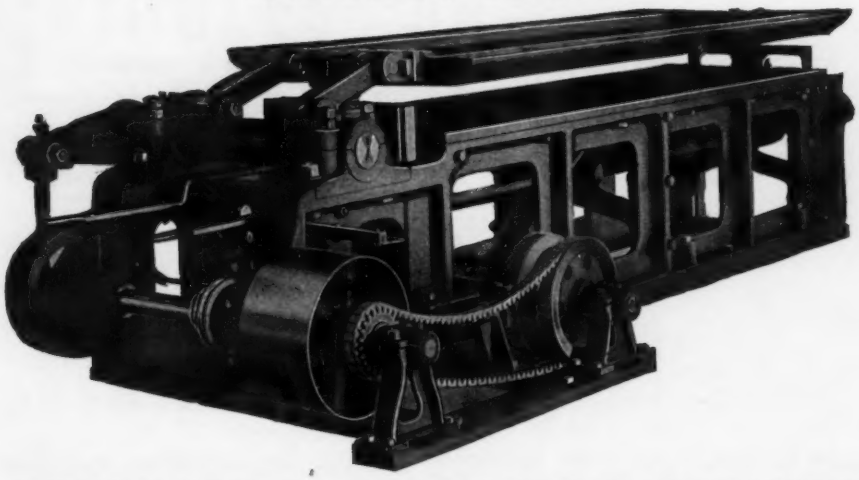
CARD CLOTHING

For Cotton, Woolen, Worsted and Silk.

451 ATLANTIC AVENUE, - - - - BOSTON, MASS.

Farrel Foundry & Machine Co.

ANSONIA, CONN.



SINGLE AND DOUBLE FELT HARDENERS.

Chilled and Soft Iron Rolls. Heavy Transmission Machinery.
Machine Moulded and Machine Cut Gearing, to 20 ft. diameter, Etc., Etc.
Heavy Castings, in Gray Iron or Semi Steel.

CHARLES S. BARTON, Pres. and Treas.
GEORGE S. BARTON, Secretary.

Established 1837.
Incorporated 1867.

Rice, Barton & Fales Machine and Iron Company.

MANUFACTURERS OF

Printing Machines

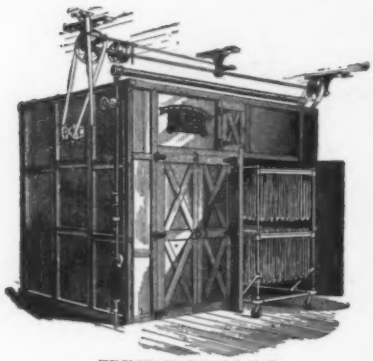
From ONE to FOURTEEN COLORS,
for ALL KINDS OF FABRICS.

ALSO

Duplex Printing Machines, | Forcing Machines,
Color Kettles, | Copper Printing Rollers,
Winders for Greys, etc.

WORCESTER, MASS., U. S. A.

"20th CENTURY" MACHINERY

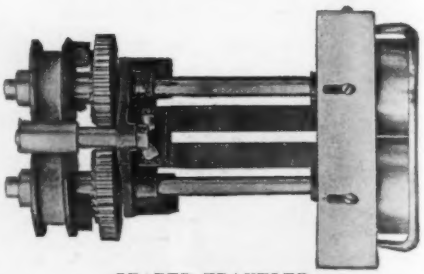


TRUCK YARN DRYER

Dryers for Wool and Cotton Stock, Yarn, Stockings and Underwear.

Carbonizers, Yarn and Wool Scouring Machines.

Ventilating Fans, Bleachers.



GEARED TRAVELER.

We also manufacture Kershaw's Geared Traveler and Improved Web Feed.

Garnett Machines and Pickers. Reclothing or furnish New Metallic Toothed Cylinders and Feed Rolls.

DYEING MACHINES, TOM TOMS, CHROMING, WASHING AND OXIDIZING MACHINES.

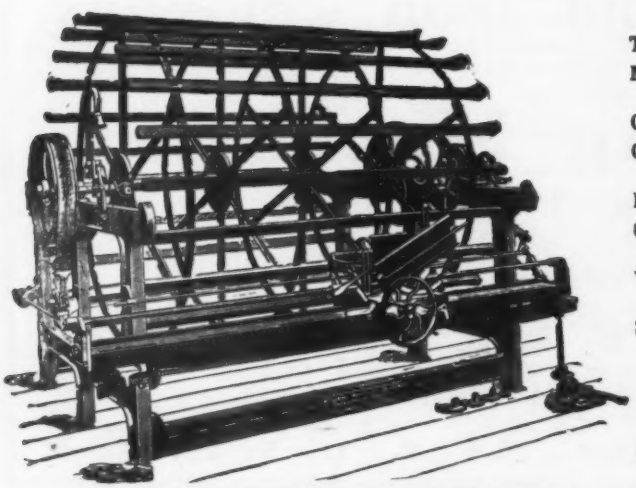
AMERICAN DRYING MACHINERY COMPANY,

19th AND WESTMORELAND STREETS, PHILADELPHIA, PA.

Telegraphic Address: "WHITELEY, HUDDERSFIELD." Nat. Telephone, 598 and 599.

Wm. Whiteley & Sons Ltd.

LOCKWOOD, HUDDERSFIELD.



WARPING MILL WITH PATENT SECTION DIVIDER.

Makers of all descriptions of Tentering and Drying Machines.

Moore & Whiteley's Patent Wool and Cotton Dryer.

Crabbing or Winding-on Frames.

Cross Raising Machines, Wool Scouring Machines,

Hydro Extractors. Warp Sizing.

Cool Air Drying and Beaming Machines.

Warping Mills with Patent Sectional Dividing Apparatus.

Self-Acting Mules. Bobbin or Pirn Winder, &c., &c.

Mercerizing Machinery.

Second-hand Tentering Machines in good repair at low prices.

SPINDLES

EASTON AND BURNHAM MACHINE CO.

PAWTUCKET, R. I.

REPAIRS FOR RABBETH SPINDLES

WE BUILD ECONOMIZERS

for boiler plants as small as 50 H. P. and up to any size. *The largest economizer plant in the world* is in the Chelsea station of the London Underground. The next largest yet built or now building is in 73rd Street (Manhattan) Station of the Interborough Company of New York. Both were built by us.

We also build FANS of all sizes. We are now building two induced draft fans for the East St. Louis & Suburban Ry., the overhung wheels of which are 19 ft. 6 ins. in diameter and 7 ft. wide at tips of the blades, probably the largest overhung fans. Ask for our new Fan Catalog "T W."

The Green Fuel Economizer Co.

MATTEAWAN, N. Y.

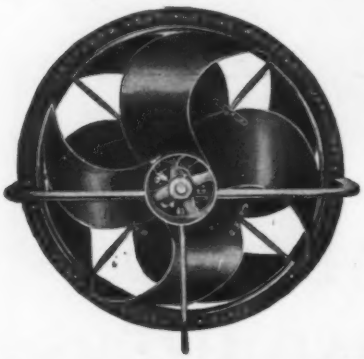
GEO. H. GIBSON CO. PARK ROW NEW YORK

(Sole Builders of the Green Fuel Economizer in this country.)

85

COMPOUND—THAT'S WHY

Barney Compound Ventilating Fans Ventilate, Purify, and Dry.



Notice the compound feature—it does the work. They force out all atmosperic impurities and draw in pure air. They often double capacity of drying rooms, expel loose steam from dye houses—preventing condensation, *cool spinning rooms.*

The Barney System is the most economical.

TELL US YOUR PROBLEM.
WRITE TODAY. FREE TRIAL OF FAN.

BARNEY VENTILATING FAN WORKS, 24-28 Binford St., Boston, Mass.

Don't let your bearings run dry—use our

Dust Proof Oil Hole Covers

They do away with dirt filled oil holes that have been a source of constant loss to machine users—save your machinery, power and oil. Whether you build or buy see that every bearing is protected by a D. P. O. H. Cover.

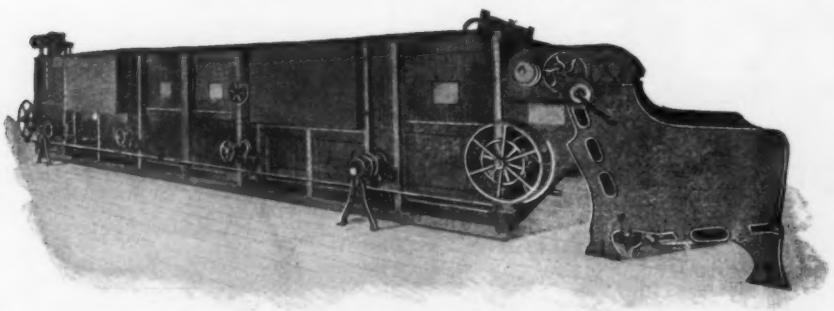
Postal will bring Samples and Catalog.

W. & C. F. TUCKER, HARTFORD, CONN.

C. G. SARGENT'S SONS

CORPORATION

GRANITEVILLE, MASS.



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Stock Dryers, Wool Washers,
Wool Dusters, Carbonizing Plants,
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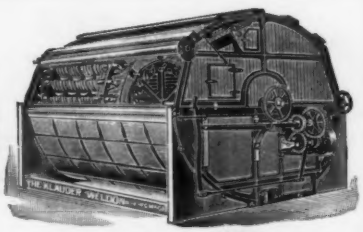
RAW WOOL AND COTTON MACHINE.

MACHINES
sold on
2 MONTHS' TRIAL
YOU
TAKE
NO
RISK

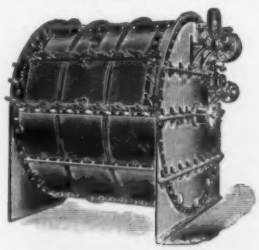


SKEIN AND SLUBBING MACHINE.

THE KLAUDER-WELDON DYEING MACHINE COMPANY

P. O. Box K, AMSTERDAM, N. Y.

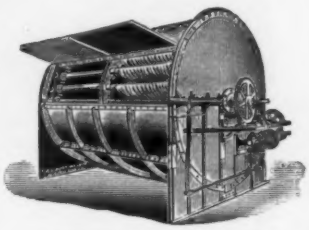
Machines for Dyeing, Bleaching and Scouring Woolen, Worsted, Cotton and Silk Skeins—Slubbing—Raw Cotton and Wool, Waste, Rags, Shoddy, Hosiery, Underwear, Hats, Caps, Knit Cloth, Tapes, etc.



SULPHUR HOSIERY MACHINE.

Special Machines for Sulphur Colors

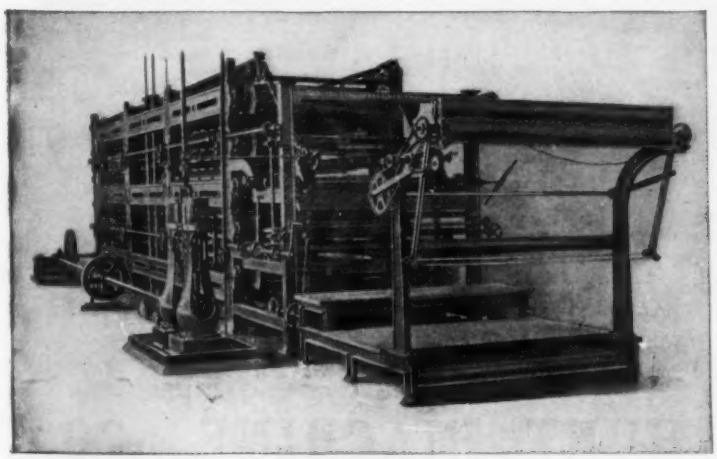
WILL EARN THEIR COST IN
LABOR ALONE
IN FROM
6 TO 12 MONTHS
ACCORDING TO CAPACITY



SULPHUR SKEIN MACHINE.

TENTERING AND DRYING MACHINES

WITH LOW DOWN FEED. **PATENTED FEBRUARY 26, 1895.**



Tentering and Drying Machines on Pipe System. Special Dryers for Heavy Felt Goods. Hot Air Drying and Tentering Machines.

Fulling Mills, Washers, Chinchilla and Whitney Machines, Whipping Machines, Cone Willows, Marsden & Blamire Lap Feed, Dyeing Machines for Piece Goods, Soaping Machines, Wringing Machines, Jigs (Double or Single), Dewing Machines, etc. Crabbing Machines for worsted. Made either single, double or triple.

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Least Water,
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Uniform Speed

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We make Special Designs to meet TEXTILE MILL conditions.

FLUMES, REGULATORS,
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CLUTCHES, HANGERS, ETC.
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Dyeing and Bleaching Machines
FOR WOVEN AND KNIT GOODS

Dye Tubs—Soap Tanks—Centrifugal Pumps

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Branch Office: 70 Kilby St., Boston. Works: Orange, Mass.

Automatic Wool Washers

PARALLEL RAKE

The "STONE DRYER," for Wool, Cotton, Rags, Etc.

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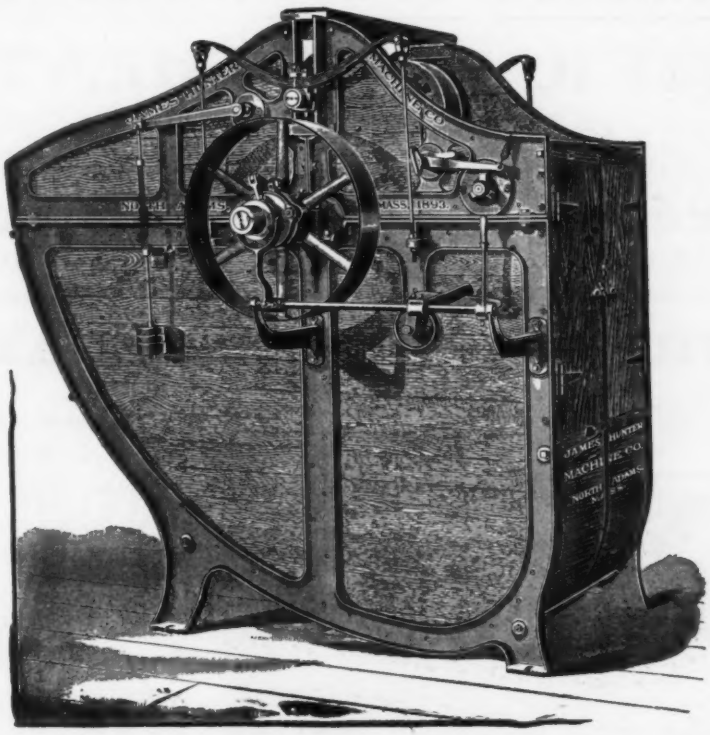

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WOOL OPENERS, SELF FEEDS, DUSTERS

JAMES HUNTER MACHINE COMPANY, NORTH ADAMS, MASS.

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Loose Shields Impossible.

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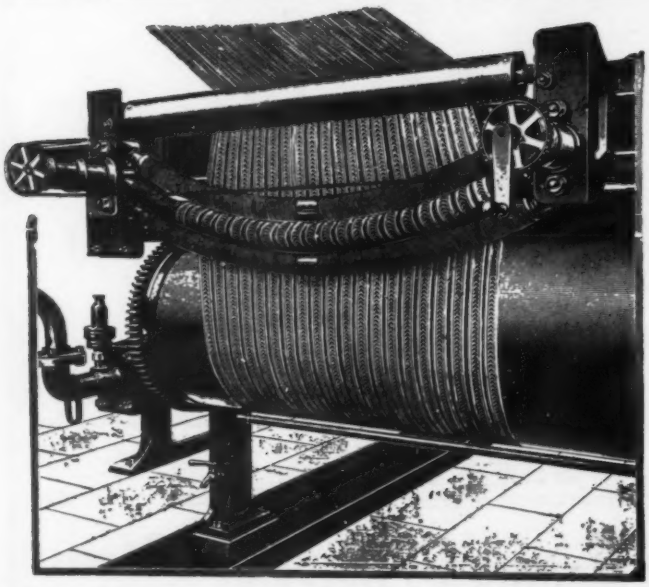

The recent invention of Wm. Mycock, an English cotton manufacturer. Hundreds sold in Great Britian and on the Continent. Large bleacheries in this country where it has been placed on trial are delighted with it. Gets the full width of goods, with perfectly even tension both ways. Can be attached to calenders or cans. Put it on trial.

Patented in United States, Canada, Great Britain and Continental countries. Infringements will be prosecuted.

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But is it wise to attempt to save it at the expense of *service* and *efficiency?* Is that saving it?

Is it wise to place your Liability Insurance in a cut rate company merely because it *is* cheap *at first?*

Isn't the *wearing* quality to be considered?

Isn't it better to place your insurance with a company that sells the *most liberal* policy, backed by ample capital and *conscientious care* of its patrons' interests?

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sold only by the Maryland Casualty Company gives protection that really *protects*.

If the best service and full returns on your investment are any object to you, write us for a sample policy — Liability Form 237 G. Act now.

Maryland Casualty Company,

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The Maryland continues to sell, at fair rates, the *Standard* form of Liability policy, which is as good as the best sold by any other company.

The company also writes Fly Wheel — Burglary — Sprinkler Leakage — Elevator — Teams — Steam Boiler — Water Damage — Physicians' Defense — Plate Glass — Personal Accident — Disability — Health, and all other classes of Casualty Insurance.

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MARYLAND CASUALTY COMPANY
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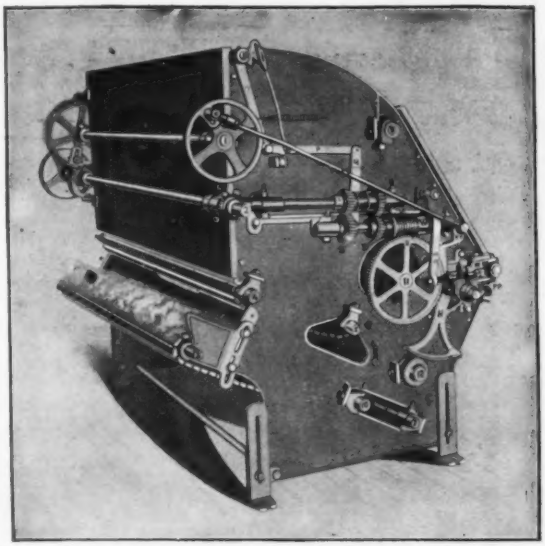
Surplus to Policyholders
$1,669,287.04

THE FISHER PATENT CARD FEED



Write Us For List of Mills Where Machines Are Used.

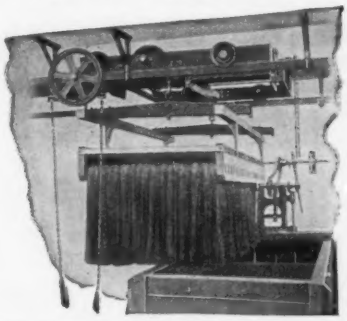
Woonsocket Machine and Press Company

WOONSOCKET, R. I.

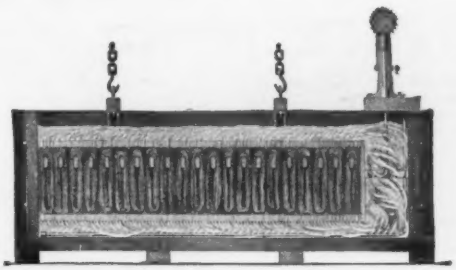
The Hussong Dyeing Machine

Patented Nov. 6, 1900. April 9, 1901. Nov. 29, 1904. June 5, 1906.

THE ONLY MACHINE THAT WILL DYE SUPHUR BLACK SUCCESSFULLY.



This illustration shows our Compressed Air Hoisting Carriage, with 300-pound Yarn Machine suspended.



Longitudinal Sectional View, showing the circulation of dye-liquor through the yarn when in operation

Points of Superiority Which We Claim for the Hussong Machine.

Durability, Even Dyeing, Saving of Steam, Saving of Dyestuff,
Saving of 75% in Labor, Makes No Waste Whatever, No Friction on the Material.
Requires but Little Power to Operate.
Leaves the Yarn and Slubbing it its Natural Condition.

Built by the American Dyeing Machine Co. Office 609 Pearl St., Camden, N. J.

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The American

WROUGHT STEEL PULLEY

Patented in the United States and Foreign Countries.

SEND FOR BOOKLET.

Is a parting PULLEY and can be applied without stripping the shaft.
It is Light, STRONG, and lasts a lifetime.
It clamps to the shaft perfectly — keys and set-screws superfluous.
Interchangeable metal Bushings to fit shafts of different sizes.
Particularly adapted to TEXTILE manufacturing.

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ASA LEES & CO., Limited,

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OF EVERY DESCRIPTION FOR COTTON, WOOLEN AND WORSTED.

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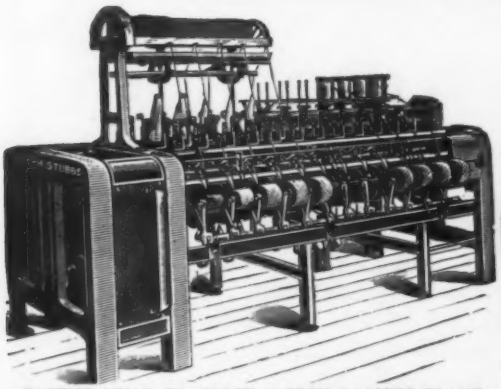
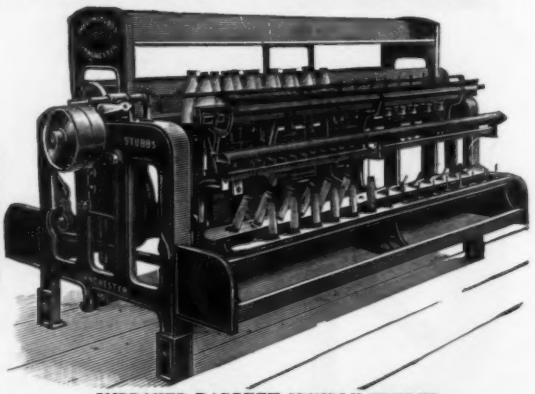
SPECIAL MACHINERY

For Winding, Gassing, Reeling, Preparing, Polishing and Bundling Yarns.



PATENT QUICK TRAVERSE COTTON GASSING FRAME.



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With Patent Tapering Motion, for Single Flanged Bobbins.

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AMMONIATED POTASH SALTS FOR SCOURING.

Dobbins' Palm Oil Fulling Soap. Dobbins' "Fast Black" Soap. Pure Olive Oil Potash Soaps.

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Received the HIGHEST AWARD on recomendation of the FRANKLIN INSTITUTE for

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The Only Perfect System of Air Moistening

And Has Been Adopted by the Representative Manufacturers of this Country.

The only System adopted in the Textile Schools. Write for Booklet "T" on Humidification. Legal Proceedings will at once be taken against infringers and users of infringements.

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NEW FEATURES; Wearing Parts, Valve and Seat Renewable.

Class A Return Trap

We manufacture Steam Traps for all duties, High and Low Pressures, returning the Condensation back into Boiler or Discharging to Hot Well, Tank, or Atmosphere.

No Elastic Gaskets, all Joints Ground Metal and Metal.

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Established 1870.

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THE BEST FIRE HOSE MADE.

(Trade Mark.)

For use in

Cotton Mills, Woolen Mills and Factories.

Seamless Woven and Rubber lined EUREKA COTTON HOSE, has no equal. Send for circular and testimonials.

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Mill Sewing Machines

No. 9—Portable Foot-Power Rotary Sewing Machine

It is especially adapted for use in Cotton and Woolen Mills, Bleacheries, Print Works at the Printing Machines, in Dye Works, Cloth Rooms, at the Fulling Mill, Shears, Calendars, Gigs, Drying Machines, etc., or any of the different finishing processes in textile mills.

Manufactured by the

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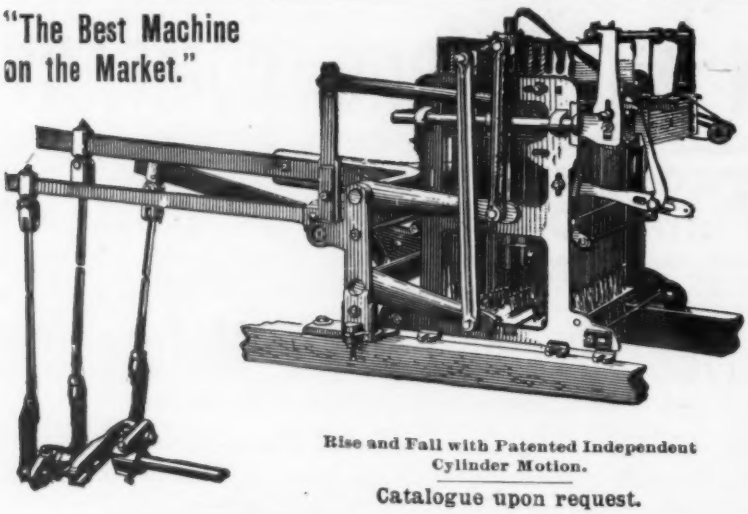
"The Best Machine on the Market."



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Original Fine Index Machines

Single Lift, Double Lift, Double Cylinder, Rise and Fall, Crossborder,

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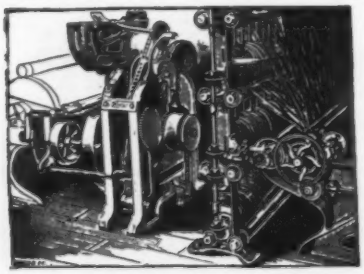

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HARRISON, N. J.

TORRANCE PATENT AUTOMATIC BALLING MACHINE

With all the latest improvements for Wool Cards. The latest and best and only Feed that will make yarn positively even.

ALSO

CHOQUETTE WASTE SAVER. Saves card fly.

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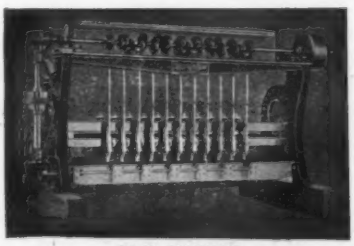
STEAM USERS of this country have upwards of 90,000 Steam Boilers under the inspection and insurance supervision of this company.



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L. F. FALES

MANUFACTURER AND BUILDER OF

SEWING Sampler MACHINES

FOR ALL PURPOSES WHERE A NUMBER OF ROWS OF SEAMS ARE REQUIRED

BUILT WITH ANY REQUIRED NUMBER OF NEEDLES.

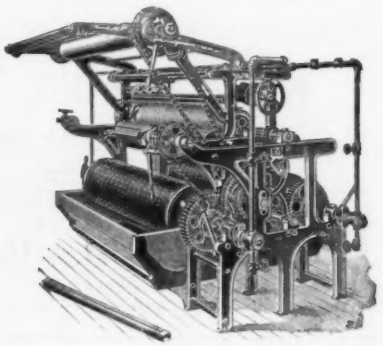
DESIGNER OF SPECIAL MACHINERY | WALPOLE, MASS. U. S. A. | PAPER SLITTING MACHINES

Exhaust Fans

Crocker-Wheeler 36-in. Vertical Fan Outfit. See Bulletin 54-Y.

FOR VENTILATING AND FOR REMOVING STEAM FROM THE DYE HOUSE.

Crocker-Wheeler Company,
Ampere, N. J.



We build our

Steam Finishing Machine

with

Four Brushes

Two Brushes or only One Brush as desired

PARKS & WOOLSON MACHINE CO
Springfield Vermont

Samples Speak Louder Than Words

And there is no **string** to this method of selling our

STEPHENSON

BAR BELT DRESSING

Ask your Dealer, or send us 2c. for testing sample.
Red Label for Leather Belts;
Green Label for Rubber or Canvas.
No **one** one kind is good for **all** belts.

Stephenson Manufacturing Co.
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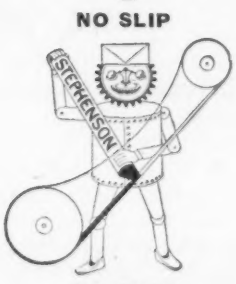

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No machinery, ink or paint—quick operation—inexpensive.

Samples on request.

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EXCELSIOR WOOL OIL COMPOUND

Washes out easily.
Saponifies perfectly.

The best lubricating and softening product for Wool, Cotton, Wool and Cotton mixed. For some manufacturers *it elminates* the scouring process which is required with all other wool oils. In all cases it effects large saving in time and soap, insures clean goods and superior fabric. *It will not* gum in the cards. Write for samples, prices and particulars.

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Keeps properly moistened and purified air in constant circulation

THE BELL HUMIDIFYING SYSTEM

Uniformity of product

cannot be attained or maintained without uniform humidity. In a properly moistened atmosphere textile materials are more flexible and coherent, working with a smoothness and uniformity impossible to obtain under ordinary mill conditions.

Healthful Operatives

are a paying investment from the dollar point of view to say nothing of the humanitarian idea that is receiving so much attention just now. Pure air without excessive moisture is a sure means to this desirable end producing both pleasing and profitable results.

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A difficult problem solved

The drawing-in of warps by hand is difficult and extremely trying on the operative. This makes it hard to get and keep an efficient force for this work, yet in the past these few operatives controlled to a certain extent the production of the mill, for no matter how many warps are dressed ahead, the looms will stand idle unless they are drawn-in. This problem which has been the cause of constant and serious loss will soon be a thing of the past for in much less time and in an ideal way the

Barber Warp Tying Machine

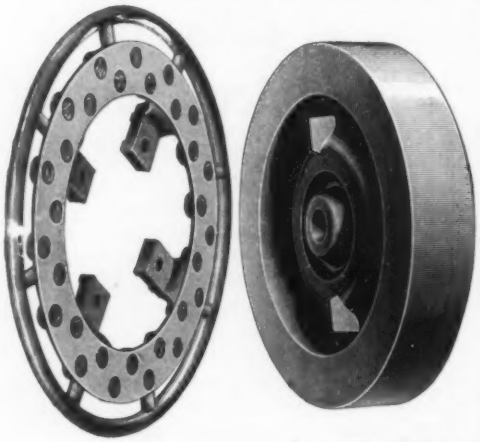
performs this work at the rate of 10,000 perfect knots hour by hour keeping all looms fully supplied with warps. Words fail to describe its perfect simplicity, the rapidity of its operation, the efficient way in which it handles all kinds and any number of harnesses and the absolute perfection with which each knot is tied. The only way for you to *know what it will do is to see it in operation.* We have a machine at our salesroom and you are cordially invited to call and investigate the saving it will effect in your mill.

Barber-Colman Company

77 Washington St. (North)

Boston.

"Compo" Cork Insert Loom Clutches are not affected by wear, dust, oil or atmospheric conditions



They always remain clean - pick up the load quickly—do not require adjustment and transmit twice as much Torque as leather-faced clutches.

Manufacturers and Users of

Cork Insert Loom Clutches, etc.

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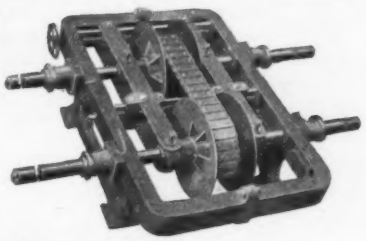

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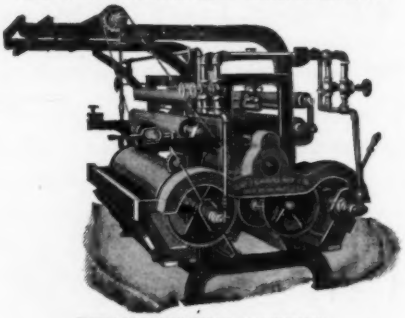

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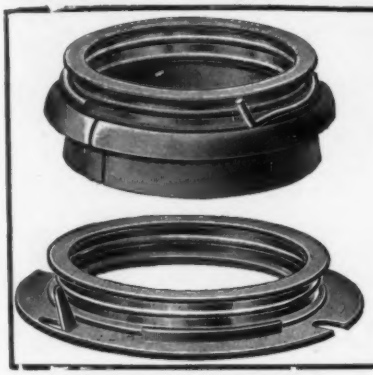

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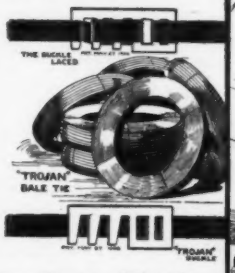

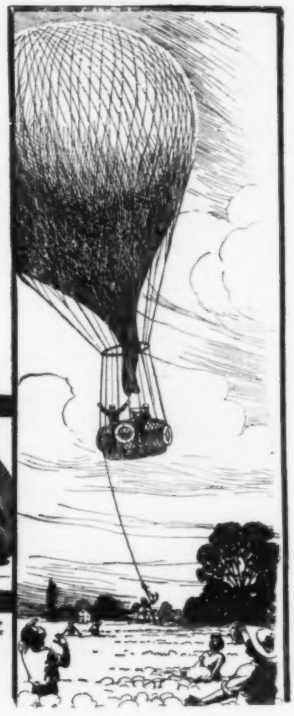

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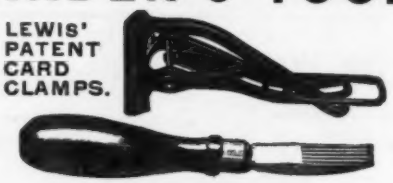

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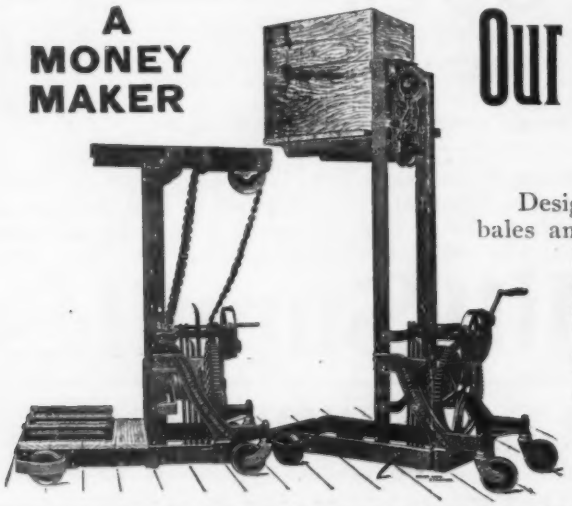

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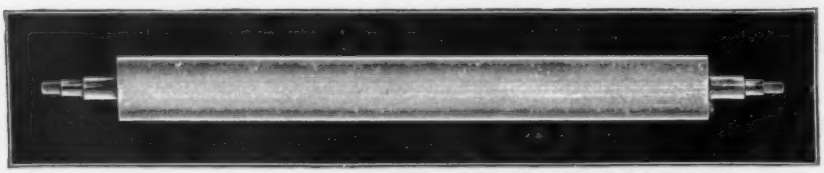

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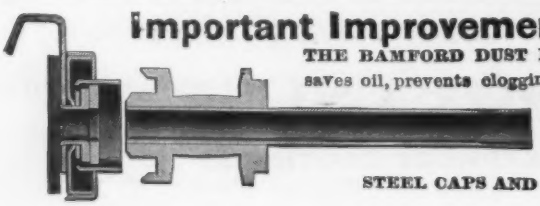

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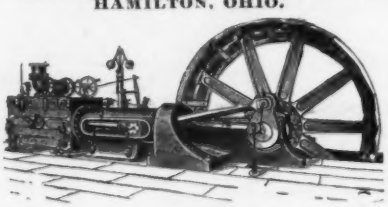

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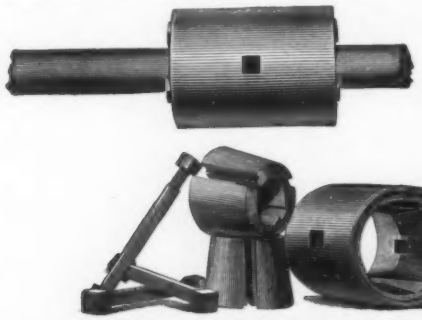

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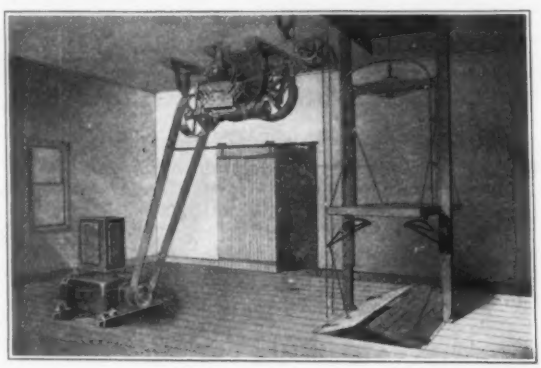

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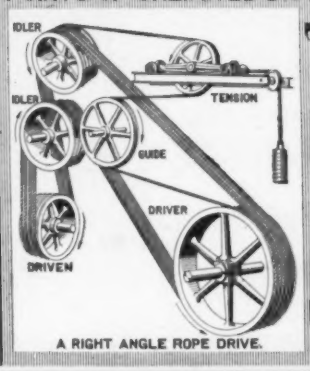

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"ROPE DRIVING" IS THE METHOD.

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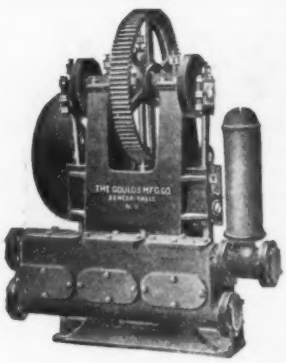

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FOR EVERY SERVICE
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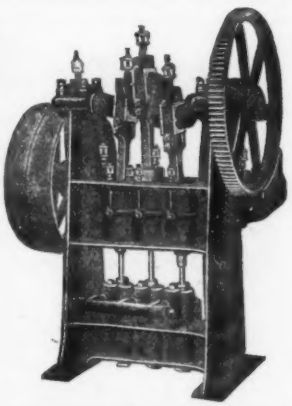

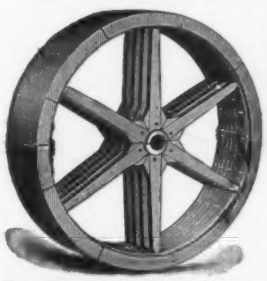

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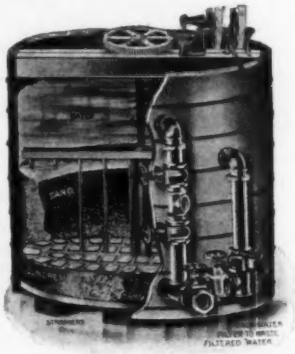

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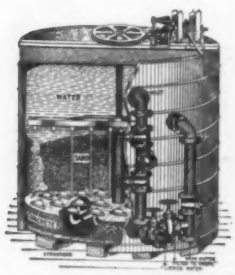

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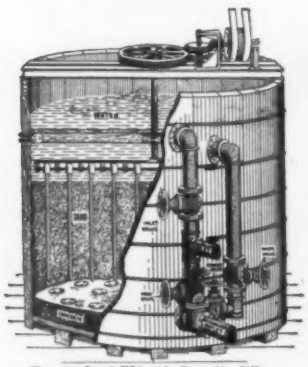

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out of the good graces of those who have once tried it. By IT we mean

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and this is the WHY of that doesn't-slip-ness. A trial of this belt never fails to convince any practical man of its power to save money for him, and when such a man (or any other man for that matter) can save money in his business, he is glad to do so. Let us send you a small, soon-over, Booklet, worth anyone's 5 minutes.

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The "Latshaw" Steel Split Pulley
Is an all steel pulley—

not a combination of steel and cast iron and spokes are not fastened by the use of rivets at hub or rim.
True running, easily applied without stripping the shaft, a double belt pulley, simple in design, especially adapted for textile mills, no open parts to collect lint and dirt.
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1906-7.

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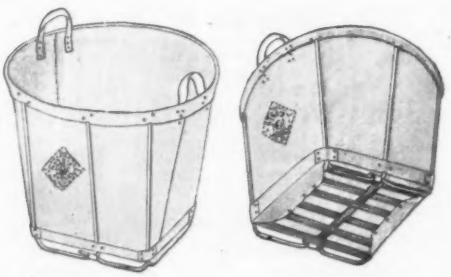

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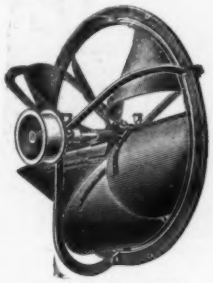

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Established 1841.

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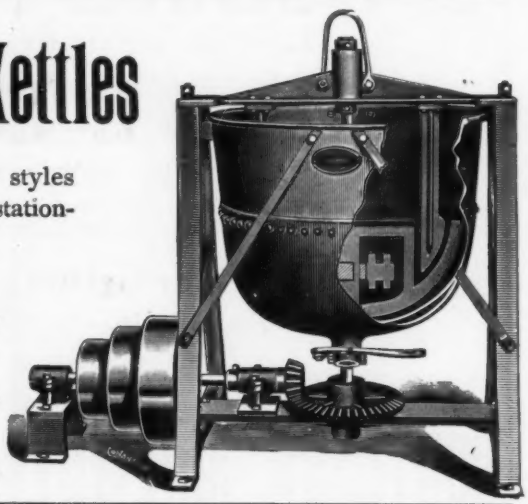

This cut represents one of our many styles of steam mixing kettles, made with stationary and removable stirrers.

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Good Locations for Cotton and Knitting Mills

are many throughout the territory traversed by the

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Resources, markets and advantages for manufacturing the raw material are unexcelled. The Land and Industrial Department of the Southern Railway is always ready to advise with manufacturers of textile commodities as to the best locations, placing at their disposal information that is succinct but convincing, dealing with every undertaking from a standpoint beneficial to the manufacturer. Go where you receive the best results is our motto and why we want you to come South.

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Land and Industrial Agent,
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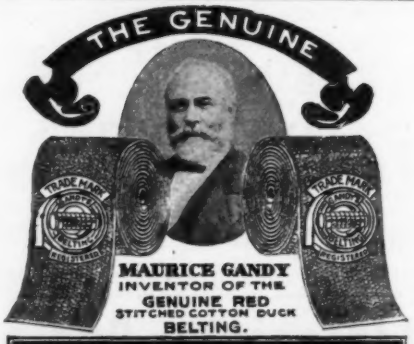

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MOTOR WOUND FOR ANY VOLTAGE.

Separates oil from bolts, nuts, and scraps of all kind—oil that would otherwise be wasted, and makes it as good as it ever was, for further use. **Send for Catalogue.**

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are especially adapted for use in Woolen Mills, IXXX Tin Plate body, side seam locked and grooved—made by machinery—every can alike. Special pattern top and bottom rings made of ¾ inch iron welded at joints and tinned. A wide "kicking band" beaded and soldered on the body. We can't tell all their good points here. Let us send full details.

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A partial list of manufacturers who have Evans' Friction Cone Pulleys in operation, transmitting from ONE TO FORTY HORSEPOWER:

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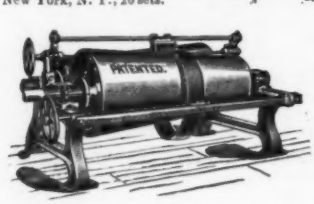

Smith & Winchester Co., So. Windham, Conn. 250 sets. Furguson & McRae, Belfast, Ireland, 25 sets. Mercantile Laundry, So. Windham, Conn., 250 sets. Washburn & Moen, Worcester, Mass., large number, all sizes. Dennison Tag Co., Boston, Mass., large number, small sizes. Sisco & Pettee Machine Co., Newton, Mass., 375 sets. Pacific Mills, Lawrence, Mass., 13 sets.

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Trolley systems are up and out of the way. They are very flexible and afford specific economy in lifting and conveying packages and materials of all kinds.

Tell us about your needs and we will tell you what our installations will do.

Yale & Towne Mfg. Co.

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Official American Textile Directory.

The TEXTILE WORLD RECORD, which for years has compiled and published the ANNUAL OFFICIAL DIRECTORY OF THE TEXTILE INDUSTRIES, recently bought the AMERICAN TEXTILE DIRECTORY, and merged the two Directories, retaining the special features of each, and with the combined subscription and sales list of both.

The OFFICIAL AMERICAN TEXTILE DIRECTORY is now published in two editions, viz.: the Office Edition, price, $3.00, and the Travelers' Edition, smaller in size, with thin paper and flexible binding, price, $2.00. The contents of each is the same.

The combination price for the TEXTILE WORLD RECORD and DIRECTORY is $3.00 per year with the Travelers' Edition, and $4.00 per year with the Office Edition.

The 1906-7 Edition is ready for prompt delivery.

CONTENTS.

A COMPLETE DIRECTORY OF MILLS including Cotton, Woolen, Knitting, Silk, Flax and Jute Mills of the United States, Canada and Mexico, together with the Dyeing and Finishing Works, Bleacheries, Print Works and other Textile Establishments.

Full information is given about each mill in almost every instance, viz.: the name of the company or firm, names of officers, agent, superintendent, the character of goods made, the machinery equipment, i. e., the number of sets of cards (or combs), the number of spindles, number of looms; whether the mill uses steam or water power, whether there is a dye house or not, the names of the selling agents or if the mill sells direct, and in many instances the name of the man is given who buys the raw material and supplies. In this section of the Directory, all the mills in one place are arranged under the head of that town, but so designated that the kind of a mill is determined at a glance by boldface letters, so that a person looking, for instance, only for woolen mills, can pick them out at a glance. This system of arrangement is conceded to be the most convenient of any, as it groups all the mills in one town together and is self-indexing, while at the same time those interested in a particular class of mills, such as cotton, silk or knit, can find them as easily as if they were classified separately.

THE MAP FEATURE was originated by the Textile World in 1894, and is copyrighted. There are 19 of these textile maps, which show only the cities and towns where there are textile establishments.

AN ALPHABETICAL INDEX to the textile establishments in the United States.

MILLS WITH WORSTED MACHINERY. A separate list is compiled of mills with worsted machinery for the convenience of those dealing exclusively with that branch. This is a feature unique in this Directory.

THE YARN TRADE INDEX. In this department are classified lists of manufacturers of different kinds of yarn who spin for the market. It gives the size of yarn spun and the form in which the yarn is put up, together with the selling agents of the mills, or, if sell direct.

THE TEXTILE MILLS IN MEXICO. This feature of the American Textile Directory is continued and brought up to date by the latest information.

COMMISSION AND ORDER SECTION. In this department are classified lists of establishments doing dyeing, bleaching, printing, finishing, and mercerizing on order, sub-divided according to the class of work done.

RAW MATERIAL SECTION. In this department are complete lists of dealers and brokers in wool, cotton shoddy and extracts, and wholesale rag dealers.

SELLING AGENTS AND DRY GOODS COMMISSION HOUSES in the principal cities of the United States, giving the character of goods handled

MANUFACTURING CLOTHIERS in the principal cities, buying from first hands, giving the class of goods made and in most instances the name of the buyer.

SUIT AND CLOAK MANUFACTURERS in the principal cities, buying from first hands, giving the class of goods made and in most instances the name of the buyer.

MACHINERY AND SUPPLY SECTION. This contains a carefully classified index of over seven hundred builders of textile machinery and dealers in mill supplies

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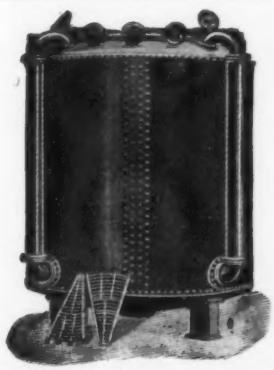

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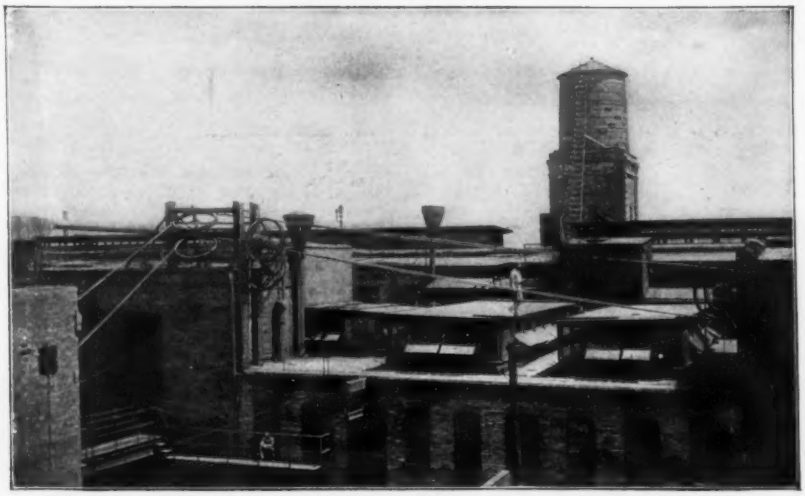

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Published Monthly by

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SAMUEL S. DALE, Editor. **E. A. POSSELT, Editor Process Department.**

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The Directory alone is $2.00 per copy for the Traveler's Edition; $3.00 for Office Edition.	
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Copy for regular advertisements must reach publication office by the 25th of month preceding date of issue to insure proper attention. Transient ads., Wants, For Sale, etc., to go on Classified pages can be taken up to the 4th of the month of publication.

We are always pleased to co-operate with advertisers in preparing attractive advertisements, and strongly recommend frequent change of copy, which increases the interest, and, therefore, the beneficial results of the advertising. We will cheerfully change copy as often as may be desired, providing it reaches us in time, but we cannot promise changes for next issue unless received as above stated.

The Official American Textile Directory

is published annually in the spring by LORD & NAGLE CO. It is a book of about 600 pages, well printed and bound. Office Edition $3.00. Traveler's Edition, $2.00.

PART I. Contains a complete directory of all the textile establishments in the United States and Canada. It tells what goods are made, the number of sets of cards, spindles, looms whether and what they dye or finish, steam or water power, who the selling agents are, the names of the officers, superintendent and buyer.

There are 22 textile maps; gives population of town and railroad connections.

PART II. Is the Yarn Trade Index, containing classified lists of yarn spinners, arranged according to kind of yarn, size and number spun, etc. All the mills with worsted machinery are included in this section.

PART III. Contains Classified List of mills doing order and commission work, also dyeing, finishing, bleaching and printing establishments, classified according to the kind of work done, and so far as possible giving width of goods handled; also shoddy, extract and flock manufacturers and wool scouring establishments.

PART IV. Manufacturer's Selling Agents and Dry Goods Commission Merchants, giving the name and address of concern, character of goods handled, different departments, with managers, list of manufacturing clothiers, and suit and cloak manufacturers, giving specialties and buyers' names. A list of city offices of textile mills is given.

PART V. Dealers and Brokers in raw materials and stock, including wool and shoddy dealers and brokers, cotton dealers and brokers, factors and buyers and wholesale rag dealers making a speciality of textile interests.

PART VI. Buyers Index of Textile Machinery and Supplies, and statistics showing textile machinery in the United States, giving spindles, looms, knitting machines, etc.

The Directory of the Knitting Trade in the United States and Canada

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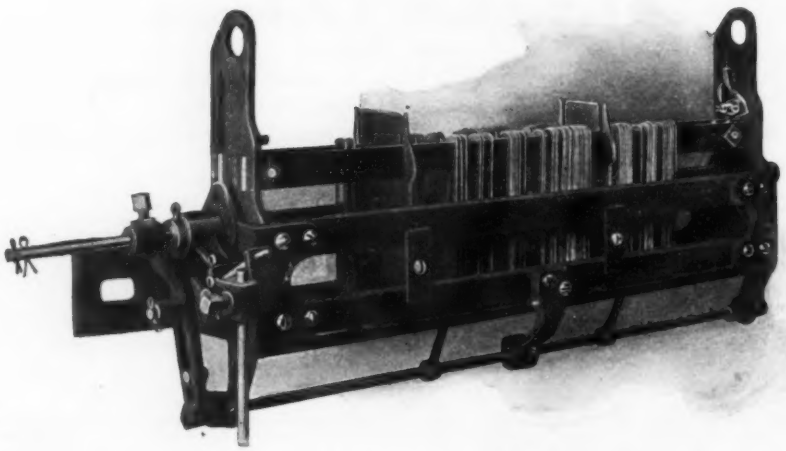

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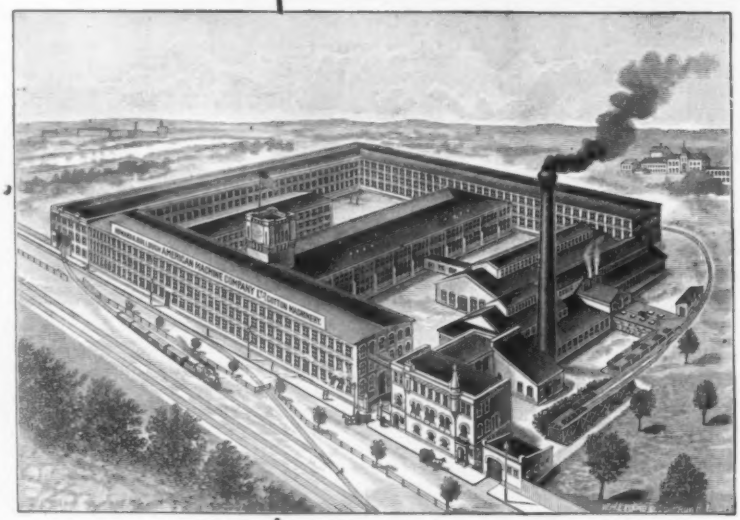

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The Textile World and Textile Record.

VOL. 32 (NEW SERIES.) DECEMBER, 1906 No. 3

Monthly Comment.

Tariff Contrasts.

We have received the following communication:

Dublin, Ga., Nov. 17, 1906.

Editor Textile World Record:

In your November issue under "Tariff Contrasts," you forgot to mention how much more each one of us 85,000,000 has to pay for our clothes now than if the tariff was removed. I mean those of us who can afford woolen clothes, for I doubt if there are over 25 or 30 per cent. of the people that do not suffer from wearing cotton and part cotton clothing. These people would be properly clothed if woolens were cheaper.

J. B. Creswell.

It is rather curious that this the only complaint regarding the burden of the tariff on wool to be brought out by "Tariff Contrasts" should come from the sunny South, so near the equator that the inhabitants of that favored land are far more likely to "suffer" from wearing wool than from wearing cotton. One would naturally have supposed that a complaint about a lack of woolen clothing would come from more northern latitudes, from Maine or Massachusetts, for example, where during a part of the year heavy woolen clothing is a necessity for protection against the rigors of the climate. But it comes from Georgia, and regardless of the place it comes from, let us give it a fair hearing.

When a man complains of having insufficient clothing it is a fair question to ask how much he is wearing out. Let us apply this test to the American people, three-quarters of whom, according to Mr. Creswell, are "suffering from wearing cotton and part cotton," because they cannot afford to buy wool.

We will take the best estimates of the world's consumption of wool available and compare the per capita consumption of wool in the United States with the consumption outside. In order to be perfectly fair in meeting Mr. Creswell's complaint, we will exclude from the comparison all the people that live within the tropics, where little or no woolen clothing is needed. This will easily leave Mr. Creswell in because Dublin, Ga., is six hundred and fifty miles from the Tropic of Cancer. This leaves the wool consumption among 1,188,823,748 foreigners to be compared with that among 85,000,000 Americans. Well, according to the best statistics available, these foreigners are using annually 1,256,000,000 pounds of scoured wool and the Americans are using 316,703,373 pounds. Each foreigner uses 17 ounces; each American 59 ounces of wool a year, or nearly four times as much. In other words, the Americans under high protection are much better clothed than are the people in foreign countries with whom Mr. Creswell would like to bring us in competition under free trade.

In 1892 there were a lot of people, a majority in fact, who thought they were being robbed by the duty on wool, just as Mr. Creswell thinks now, and so they elected Grover Cleveland president on a free wool platform. The result was that during a period of several years it was next to impossible to earn money with which to buy even free wool. For some reminders of that period we refer Mr. Creswell to "Lest We Forget" in our September issue. It is a companion piece to "Tariff Contrasts."

We do not doubt that Mr. Creswell honestly thinks that he and his fellow Americans are being deprived of clothing by the duty on wool. His mistake arises from looking at only one side of the question. The purchase of woolen clothing, of anything in fact, depends upon purchasing power as well as price.

The Home Market Club.

Several notable addresses were made at the recent meeting of the Home Market Club. Lieutenant-Governor Draper represented the commonwealth of Massachusetts, and in his address dwelt upon the phenomenal prosperity under the policy of protection. President James W. Van Cleave, of the National Association of manufacturers, expressed what he believed to be the sentiment of the West in favor of a maintenance of the protection principle in all tariff legislation, and necessary revision of schedules by the friends of a protective tariff. Charles Heber Clark, of Philadelphia, in his address showed no sympathy with those who in times of prosperity would plunge the country into the uncertainties of tariff revision. He preferred prosperity to adversity; the Dingley Bill to the unknown bill that would emerge from a struggle at Washington to frame a new tariff law. That Mr. Clark had the majority of his hearers with him was manifest from the frequent applause that punctuated his address. Congressman McCleary, of Minnesota, appealed to the friends of protection to place their main reliance for the defense of that policy on the common sense of the people. He believed in meeting the revisionists face to face, discussing the question with them and demonstrating to them the fallacy of free trade for the United States.

Growth of the German Chemical Industry.

Some interesting details regarding the German chemical industry are found in a consular report of the annual convention of the Society of German Chemical Industries, at Nuremberg. The imports of raw materials and exports of chemical products in 1905 each show an increase over 1904. The chief factor in the development of the German chemical industry is the low wages, which in 1905 averaged $245. The report then refers to the trade in chemicals with the United States as follows:

> This factor (low wages) added to the highly developed practical utilization of material formerly thrown away as waste by-products, but now rendered useful by improved manufacturing processes and the quick application of the discoveries of chemical research for technical and commercial purposes, explains the superiority of Germany as a seller of chemicals and drugs in the markets of the world, the United States alone buying from $15,000,000 to $16,000,000 worth every year. The number of chemical plants increased from 8,004 in 1904 to 8,278 in 1905. The wages paid to the "regular" laborers amounted in 1904 to $44,030,000, and in 1905 to $47,005,000, the number of such laborers being 179,800 in 1904 and 188,400 in 1905. The profits achieved by this great branch of German manufacturing during that year are calculated from the balances of 142 stock companies with a paid up capital of $109,480,000, "mortgages and securities," representing $19,992,000, and the reserve capital figuring $33,796,000. The best record year, 1899, is taken as a basis for the profit estimation and given the figure 100. The subsequent years by comparison show the following results accordingly: 1899, 100; 1900, 91.2; 1901, 90; 1902, 87.2; 1903, 93.3; 1904, 98.7; 1905, 106.2

It is in coal tar colors that the greatest prosperity is recorded:

> The branch representing the manufacture of colors and dyes from coal tar shows the greatest increase, followed closely by the powder and explosives manufactures, which were much benefited by the Russo-Japanese war. The industries of artificial fertilizers, alkalies, mineral acids, and matches also made good gains. The least increase is noted for the industries of pharmaceutical, photographic, and other technical preparations, because competition was so strong in these branches as to prevent a rise in prices corresponding to the rise in raw materials and labor.

This development in the German chemical industry is due in large measure to the protection afforded to German manufacturers

by the patent laws of Great Britain and the United States It is a common mistake to assume that the taxation of imports is the chief means of protection. Patent laws can be made equally protective and it is one of the anomalies of the present condition that American and British laws protect the German manufacturer.

A Convention for the Extension of Foreign Trade.

We have received a circular, signed by ten members of a committee headed by Cornelius N. Bliss, representing the New York Board of Trade and Transportation, in which announcement is made of a Foreign Commerce Convention to be held in the New Willard Hotel, Washington, D. C., on Jan. 14 next. It states among other things that:

Each association represented in the Convention will furnish its delegates with a credential duly certified by its President and Secretary, stating the number of members who are entitled to vote in such association. Each association having four or more delegates in the Convention will, when division is demanded, be entitled to cast the number of votes equal to the number of members such association has certified to in its credential. Where only three delegates, or less, are sent by an association, each such delegate present will be entitled to cast not to exceed one hundred votes on all questions where division is demanded; provided, however, that the total number of votes cast by the delegates from such association shall not exceed the number of its members, as certified in its credential.

Each delegate appointed by the Governor of a State may, on all questions where a division is demanded, cast one-tenth of the number of votes to which his State is entitled, and each State shall be entitled to one vote for each 20,000 of the inhabitants of such State according to the National Census of 1900.

The obstacles which have hampered our efforts to develop the commerce of the United States with foreign countries are evident to everyone familiar with that trade. That those obstacles should be removed at the earliest possible moment is unquestioned if we are to attain pre-eminence instead of remaining, as we are, far in the rear in the struggle with Europe for foreign commercial supremacy.

We feel assured that the National Government will give the full weight of its influence towards the success of this movement and that Congress will promptly and adequately respond to any well supported demand for legislation which may be deemed beneficial to the interests of the country as represented in the Convention.

The Committee has the very great pleasure to announce that the Honorable Elihu Root, Secretary of State of the United States, has consented to address the Convention and will give it the benefit of his observations and experiences, and of the information acquired on his recent tour of the South American countries, the object of which was to bring about closer relations between those countries and ourselves. The result of that tour having been eminently successful, it is believed by the Committee that the present time is ripe for this move for the betterment of our relations, on business lines, with our South American neighbors on whom Secretary Root created so favorable an impression.

Doubtless such gatherings with the resulting discussions and resolutions will have good results in stimulating interest in the subject of foreign trade, pointing out the difficulties which now hamper the entry of our goods into foreign countries and securing the help of the government in this work. It should not be forgotten, however, that individual effort is the chief means of securing new markets abroad as well as at home. There is a natural tendency to exaggerate the importance of associations and government help in this work. While conceding the importance of these influences, it must be admitted that alone they never can develop any market, while there are many examples of markets being developed without them.

The individual merchant must rely mainly on himself to sell his goods abroad. He must study the wants of the prospective customers and then make the goods to supply their requirements. When he has done this he will jealously guard the information for his own benefit, and will be found as unwilling to disclose that information to his competitor at home as to the one abroad. There are fortunes in this knowledge of markets, and without minimizing the importance of national conventions and government aid, we would suggest that the coming National Convention for the Extension of the Foreign Commerce of the United States could do nothing more effective toward attaining its object than to persuade American merchants to rely on themselves.

The value of the raw silk imported into the United States for the fiscal year ending June 30, 1906, is estimated at $52,855,611.

The Australian Wool Clip.

The extreme variations in the rainfall in Australia are the cause of the alternating of prosperity and business depression in that country. For the past two years there has been a succession of wet seasons, and during the present season the rainfall has been especially heavy. As a result the wool clip promises to be large and of good quality. The situation is thus summed up by the Manchester Guardian:

The letters of our Australian correspondents show that never before has such a season been known. The last drought was distinguished not only as the longest but as the most widely spread, and the present season is the very antithesis of the calamitous period, for in every State of the Commonwealth unprecedentedly heavy and continuous rains have fallen, and pastoralists and agriculturalists are all extremely prosperous. On October 16 a leading pastoralist in South Australia writes: "I shall finish shearing here in about three days if the weather holds good; on my largest property we are not getting on very fast, but still better than our neighbors. At S. Booboorowie, for instance, they have not yet made a start. A great many stations are shearing by machinery and contract this year, and it seems to me the contractors have got their hands full, especially as the season is a wet one. Even in the outside country, owing to the rains, many sheds have not yet 'cut out,' but when they do, shearing about here will go on more rapidly, as the men still detained up there will be available for work here."

In South Australia wheat and oats are sown and cut for hay, and another correspondent, as illustrative of the abnormal season, states that the hay harvest, which ought to have ended, had not in many districts even commenced. Another letter tells us that all classes of property are rising in value, and it goes on: "I attended the sale of some eastern properties which I thought might be worth £15,500 the lot; they made £25,900. One that I wanted to buy and valued at £6,600 sold at £9,500."

From New South Wales one of the largest owners in the State writes as follows with regard to the season on October 15: "The country about here is waving with green feed and herbage, and not for many years past has there been such a favorable spring. It is certain everything is safe for this summer at all events, which is a great comfort, as it seems to make an assurance of another good year." The same correspondent adds: "I have not much news, except that shearing is greatly delayed all over the country by the frequent rains. It ought to have been finished at Brookong before now, but I hear they have no less than 90,000 sheep still to shear, and only 40 shearers, instead of the usual number—80. Shearers are very hard to get all over the country, and the reason is stated to be that so many of them have gone farming. Another large station—Mahonga, whose clip is branded Mahonga under RR—has been shearing for ten weeks past, and is only half through." There are experts who think that sheep with a month's extra growth of wool upon them will cut lighter fleeces than last year. Experience shows, however, that the fleece should weigh at least 10 per cent. heavier. These experts have reduced their estimate of this year's Australian increase from 200,000 bales to 150,000. Others think that the increase will be not less than 250,000 bales, and that so far as Australia is concerned an abundance of wool is assured.

A Suggestion.

Our efforts to promote more friendly relations between the American cotton planters and the cotton spinners in all parts of the world are so well known that the suggestion we are about to make to the spinners of Europe can by no possibility be misunderstood. In a recent issue of the Textile Mercury we find an editorial article on "International Spinners and the Cotton Supply," which contains certain unfortunate expressions calculated to stir up discord instead of promoting harmony between the producers and the spinners of cotton. Nothing but harm could result from repeating the expressions and so we will not quote them here. We take this occasion, however, to call the attention of the writer of the "Mercury" article and of all who may sympathize with him to certain fundamental facts: The existence of the cotton industry of Europe depends on the labor of the American cotton planters. These planters may not enjoy so large a share of those things that embellish civilized life as do the inhabitants of Europe who spin and weave American cotton into yarn and cloth. The planters, however, are intelligent, honest and straightforward. They know their rights and have that keen intelligence found among all who are next to the soil. They believe that in the world-wide prosperity of the cotton trade that is giving the stockholders in Lancashire mills, dividends of 10 to 40 per cent. they are entitled to share. They are ready and anxious to co-operate with the spinners for the reform of abuses for which both or neither may be responsible. They will meet them, however, only as equals. and any disposition on the part of the European spinners to meet on any other basis can have but one effect—to keep the producers and the transatlantic spinners of cotton apart.

Cotton Associations and the Metric System.

Currency having recently been given to the statement that the New England (now the National) Cotton Manufacturers' Association had endorsed the introduction of the metric system into the United States, we addressed a letter of inquiry to the secretary of the association and received the following reply:

The National Association of Cotton Manufacturers (Successor to New England Cotton Manufacturers' Association).

Boston, Mass., December 3, 1906.

Editor Textile World Record:

Sir: In reply to your inquiry relative to the standing of this Association on the subject of the application of the metric system to yarn numbering, I would state that I translated the Report of the International Congress for the Unification of the Numbering of Yarns, held at the International Exposition at Paris, September, 1900 (omitting some portions relating only to other than cotton yarns) and submitted the translation with two comparative tables of the metric and the English systems of cotton yarn numbering, which I computed for the purpose, at the annual meeting of this Association held in April, 1901. The paper was discussed, but the meeting did not take any vote on the merits of the proposed metric system of yarn numbering. I do not recall that the metric system was ever submitted or acted upon in any manner at any other meeting of this Association.

The Board of Government of the Association was of the opinion that full consideration should be given to the facts in the matter, and later authorized William Whitman, one of its members, to appear before a congressional committee giving hearings on the subject (in 1902) and to submit a printed copy of the translation mentioned above and its accompanying tables.

Yours very truly,

C. J. H. Woodbury, Secretary.

Neither the National (formerly the New England) Association of Cotton Manufacturers, nor the American Cotton Manufacturers' Association has ever taken any action in favor of the metric system of weights and measures.

The Truth About Cotton Splits in the Philippines.

Certain newspapers, among them Harper's Weekly and the New York Evening Post, aided by a few agitators, have been raising a great hue and cry over the 100 per cent. surtax on cotton splits imported into the Philippines, and have endeavored to magnify the matter into a great international issue. The agitation began with an article in "The Outlook" by Bishop Brent of Manila, who considered it necessary to explain that he was "a citizen of the United States of America." His article, entitled, "Tyranny or Democracy—Which?" contained such lurid passages as these:

Tyranny is that form of oppression which ensues when the ruling power coerces or flouts the will of the people, whether the power be the absolute monarch of a kingdom, or the Senate of a Republic that boasts its government to be "of the people, by the people, for the people." Indignation against tyranny burned so fiercely in the hearts of our forefathers that it consumed the bonds of union which tied the old land to the new. Then with constructive hand the revolting colonists set up the framework of a nation whose motto was to be liberty for all and for always.

If the inhabitants of this Archipelago had the spirit of the American colonists of 1776, they would rise in revolt and cast every shred of American cotton into Manila Bay, presumably winning by this act the applause of all honest-minded Americans.

Along with this vision of a Manila cotton party that would live in history and remain for all time an inspiring example to all future generations of Filipinos, teaching them to hate tyrants and taxation without representation, the bishop gives his account of how the cotton plot was hatched and executed.

According to the tariff law of 1901, American cotton textiles competed with English goods with a moderate degree of success. But the ambition of the American industry was to obtain exclusive possession of the insular trade, and when the tariff was revised in 1905 changes were made, at the dictation of American manufacturers, favorable, as they thought, to this end. But the law failed to work as its framers purposed, and trade immediately reverted to English and Spanish "splits."

A representative of American cotton interests, who during the last year found that he could not put his goods in the market, said to a Manila merchant: "When I return to America we will have this altered. We are going to make it impossible for you to sell 'splits.'" And he was true to his word. Congress apparently is the servant of the cotton industry, for on February 25, 1906, an act was passed placing a surtax of one hundred per cent.

on "splits," the single-selvaged fabrics into which the double-width fabrics of English make are cut in order to gain competitive foothold. No opportunity was given for a fair discussion of the act among those who would be chiefly affected, and it was rushed into operation with such precipitateness that local merchants who had placed large orders for "splits" in Europe were unable to countermand them before it became law. The result is that American cottons, unwilling to compete on the basis of fair legislation, are foisted upon reluctant and unwilling buyers.

About seventy per cent. of cotton textiles hitherto sold have been "splits," the balance being mainly American goods of a higher grade. These "splits" are worn by millions of poorer people, both men and women, as a staple article of clothing. The material is poor and cheap, perhaps one dollar apiece lower than the competing product from America, but, as anyone knows who has any cognizance of the meaning of poverty in the Philippine Islands, it is as much as the native can afford. And yet, in order that there may be an additional market for the surplus trade in American cottons, the Filipino is prevented from buying the article he wants and is forced to purchase a textile that he cannot afford and does not want. America's profits on cotton textiles in the home market are so great that she can afford to carry her surplus to England and undersell her competitors there. Not satisfied with this, she is now thrusting by force a fragment of this surplus on the poorer Filipinos, after having tried to get control of the market by fair means and failed.

Then comes the following:

But when the effective agent of the nation in Washington belies the country's character by committing the very fault that led the founders of the Republic to strike for independence, what remains for an honest man to do but to rise in revolt and utter his solemn protest? This I now do in the name of liberty and honor and justice. Of what value is it that the purpose of the people is sound if they have not character enough to put it into effect? What boots it that the majority of the American Nation have a pure motive if the controlling forces sully it with the stain of dishonor? What benefit can there be in local education in self-government out in these islands if the teacher in the homeland lies under the heels of tyranny? In the days of George III of England the British public were on the side of justice, but it availed nothing as long as the hand that wielded the power was tyrannous. So it is now. Is America governed by a democracy or a tyranny? If by the former, why do the people demand one thing and the Government give another? Are the operations of the State approximately coincident with the purposes of the Nation, or is democracy merely a pretty plaything for idealists to toy with?

The moment is not one in which to parade our ideals and talk of our glory. It is a moment for stern and relentless action. There is no place left for repentance. The common safety requires that the Nation shall wrest from the upper legislative chamber in Washington the power which it has steadfastly abused, and make Senators directly responsible to the will of the people. This is the necessary preface to a course of honor. Fellow citizens, to the task!

Manila, Philippine Islands, May 15, 1906.

In the course of time the bishop's article reached Manila where the newpapers joined in the cry. Thus under the caption "That Dirty Little Outrage" the "Manila Times" repeats Bishop Brent's account of the affair and adds:

If public sentiment in the United States counts for anything, that "mean little piece of special legislation," known as the cotton "splits" tariff law or amendment by which a surtax of 100 per cent. was put on "splits" entering these islands, has not a very long lease of life before it and the joy of those merchants responsible for it, if not premature, seems destined to be ephemeral.

Unfortunately while our cotton manufacturers were benefiting themselves, it was not only at the expense of their British competitors, but also of the Filipino people, as it is stated that now the poor Filipino must pay a higher price for his cotton goods. The whole case apparently presents a beautifully typical instance of selfish exploitation.

In Bishop Brent, however, the cotton manufacturers found a Tartar and the Filipinos a David willing to go up and fight against the modern Goliath-unconscienceless capital, and, if we accept General Smith's inaugural dictum that "the American people always do the fair thing and the just thing once they know the facts," it will not be long until this seemingly monstrous wrong is righted.

Next came the comments of the English papers, which, naturally, were shocked by anything even resembling the exploitation of aliens. Thus in the "Manchester Guardian" we find the following:

The "Manila Times" of September 27 devotes a leading article to a warm protest against the prohibitive duty of 100 per cent. on cotton "splits" which has been imposed by special legislation in order to destroy Manchester competition with American goods.

This duty on "splits" has been condemned in America itself as a "dirty little outrage" and "a mean little piece of special legislation." The incident certainly does not reflect much credit on Congress, or speak well for American disinterestedness in the government of the Philippines.

In view of the wordy tempest that has been raised over the matter, it may be worth while to state the facts, to most of which Bishop Brent, the "Manila Times" and the "Manchester Guardian" apparently are strangers.

On October 29, 1899, the Military Governor of the Philippines issued an order establishing a tariff on imports into the Archipelago. Two years later, on Sept. 17, 1901, the United States Philippine Commission revised this tariff, and for convenience we will call this act of 1901 the Commission act. In the course of time a second revision was found to be necessary. Accordingly the War Department and the American author-

ities in the Philippines started to draft a new tariff act, but they had not gone very far before they found that many influential members of the Senate were unwilling that so much power over Philippine tariff laws should be exercised by the executive branch of the government. No objection was raised in the House; in fact many of the House leaders seemed very glad to shift the work of revising the Philippine tariff to the broad shoulders of Secretary Taft. The Senate, however, was obdurate, and so it was decided that the War Department should frame a bill for the approval of Congress. This work was entrusted to the Bureau of Insular Affairs, of which Col. Edwards was then chief. The detail work of revising the bill was, however, given to a trusted and very competent clerk of that Bureau, a man who had spent many years in the government service and was familiar with the Spanish language and the customs of Spanish-speaking countries.

Let us state here the conviction that it would have been difficult to have made a better selection of a single individual for this duty, and that he deserves great credit for the bill he framed, a very good bill despite a defect to which we will call attention. If we were at liberty to mention this man's name we would name the act after him as a very high compliment to his ability.

As the bill was to run the congressional gauntlet it was decided by Secretary Taft that before introducing it in the House it should be submitted to the leading interests affected by its provisions, with a request for criticism and suggestions. Accordingly copies of the Insular Bureau draft, arranged in columns parallel with the Commission bill then in force, were distributed to many firms and individuals throughout the country with a request for suggestions to be sent to the Bureau of Insular Affairs before a certain date. This was done with the best of intentions, but as a matter of fact it proved to be a farce. In the first place careful and well-considered opinions of tariff schedules cannot be obtained by such a circularizing method. In the next place very few people were interested in the Philippine tariff. But the principal reason why the plan of getting a concensus of opinion failed was because the rates in both the old and the proposed measures were expressed in metric weights and measures which very few people understood. No one knowing or caring much about the matter, very few replies were received.

When framing the proposed schedules the Bureau of Insular Affairs received a suggestion from a prominent cotton goods firm in New York, recommending certain changes in classification of cotton cloths by "set" and width under paragraph 117. They stated that the changes were intended to benefit American manufacturers. As the firm stood high in the trade the suggestion was incorporated in the new measure, the old and the new rates being as follows:

COMMISSION ACT.

Textiles plain and without figures, stamped or printed, napped or not, measuring not over 65 centimeters in width, weighing 8 kilograms or more per 100 square meters.

(a) To 18 threads kilo .....$ .10
(b) From 19 to 30 threads kilo ..... .14
(c) From 31 to 38 threads kilo ..... .18
(d) 39 threads or more kilo ..... .28

BUREAU BILL.

Textiles plain and without figures, stamped or printed, napped or not, measuring not over 100 centimeters in width, weighing 8 kilograms or more per 100 square meters.

(a) To 18 threads kilo .....$ .10
(b) From 19 to 25 threads kilo ..... .14
(c) From 26 to 38 threads kilo ..... .18
(d) 39 threads or more kilo ..... .28

(Note, the set is indicated by the number of threads in a square of six millimeters.)

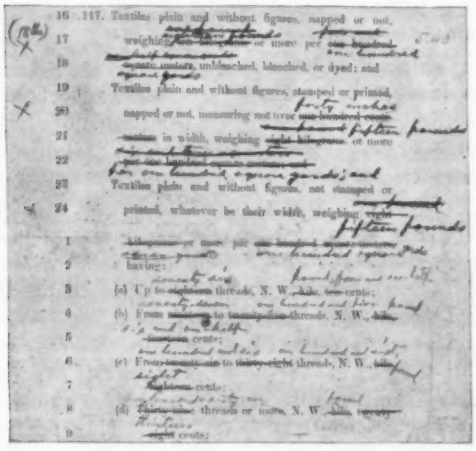
Cotton schedules in that form are Greek to the cotton manufacturers and merchants of the United States. Translating them into intelligible language involves a laborious calculation, liable to errors at every step. Consequently when the Bureau of Insular Affairs told a man that these changes had been made for his benefit the man would be inclined to take the Bureau's word for it, feel thankful and let it go at that.

Accordingly the Bureau schedule was incorporated in the bill introduced in the House and another and, if possible, greater farce was enacted. The House showed no interest in the textile schedule, did not understand it nor try to. There was a pretense of a public hearing before the Ways and

Means Committee at which Secretary Taft and Col. Edwards were the only witnesses. The following colloquy on Feb. 4, 1905, indicates a commendable but scarcely adequate effort on the part of one man to gain the information necessary to understand what the duty on, say, a yard of 4-pound 36-inch cotton cloth with 64 threads of warp and 60 threads of filling per inch, would be under a tariff that imposes a duty of 18 cents a kilo on cloth with 26 to 38 threads in a square of 6 millimeters:

Mr. Bourke Cockran—What is a kilo?
Secretary Taft—It is about 2.20 pounds.

Soon after this on Feb. 9, two men, at a suggestion from the Ways and Means Committee, called on Col. Edwards at the Bureau of Insular Affairs and made a recommendation, the adoption of which would have prevented the mistake that is now disturbing Bishop Brent. It was a request that the Philippine tariff schedules be based on English weights and measures, and thus be made intelligible to American manufacturers. Col. Edwards was so favorably impressed with the argument that he referred them to Secretary Taft, who in turn told them to frame an amendment. The two petitioners worked until the small hours of the morning reducing the schedules to American standards. Here is a record of their work that night on paragraph 117:


117. Textiles plain and without figures, napped or not,
Textiles plain and without figures, stamped or printed,
Textiles plain and without figures, not stamped or
printed, whatever be their width, weighing
having:
(a) Up to
(b) From
(c) From
(d)
cents;

which would have made the schedule intelligible not only to the American merchants, but to the cotton trade of the world, in this form:

Textiles plain and without figures, stamped or printed, napped or not, measuring not over 40 inches in width, weighing 15 pounds or more per 100 square yards.

(a) Up to 76 threads,	pound	$.045
(b) From 77 to 105 threads,	pound	.065
(c) From 106 to 160 threads,	pound	.080
(d) 161 threads or more,	pound	.13

(Note.—The set is indicated by the number of threads in a square of one inch.)

The bill, however, was reported to the House the next day, without this amendment, was passed, and, after a hearing behind closed doors before a committee, at which Secretary Taft was the only witness, passed the Senate, and was signed by the President on March 3, the day before his inauguration for a second term.

As soon as it became a law the exporters of cotton goods began to study it and immediately discovered that paragraph 117 contained a little joker; that the change in "set" classification, recommended by the New York firm as calculated to help American manufacturers, was on the contrary an injury to them; that it imposed a higher duty on the "sets" of standard American prints, while the low duty on the "poor and cheap material" made in England, but not in America, was left unchanged. When the matter was brought to the attention of the New York firm responsible for the change, they were dumbfounded, and declared that the change had been recommended to them by a third party. Then came the report that this third party was an importer with English connections, and that he had juggled this schedule to favor the British manufacturer. It is certain that the change was one such as English exporters would have favored, and whether the charge of trickery in this case was true or not, it became the settled conviction in the cotton goods trade that it was true. Congress had adjourned and it was the turn of Lancashire to laugh.

During the next nine months the exports of American prints to the Philippines fell off about 75 per cent., and by the time the new Congress met in December, 1905, the cotton goods merchants had resolved to have the mistake corrected or know the reason

why. The firm that had recommended the blunder were deeply chagrined and offered no opposition to a petition to correct it. Neither did the Secretary of War, the House, Senate, or President, none of whom apparently had the slightest knowledge of the technical merits of the case. There was a disposition on the part of the War Department and leaders in Congress to disclaim responsibility, but to make sure that no responsibility for mistakes should attach to them in the attempt to correct the mistake, both turned the framing of the amendment over to the merchants of New York. With them it was not a case of turning the other cheek. They had been injured by what many believed to be an English trick and when afforded an opportunity of squaring themselves they improved it by not only readjusting the "set" classification, which had caused the trouble, but also by imposing a surtax of 100 per cent. on "splits," which are not made in the United States.

We make no excuse for this action. We simply state the facts. Here was a bill that for all practical purposes was in a language unknown to the cotton trade. The merits of the question at issue were unknown to Congress, the War Department, the cotton trade, and the public generally. The amount of foreign trade affected was a mere bagatelle. Very few knew or cared whether "splits" were or were not used in the Philippines.

The amendment framed under these conditions became a law on February 26, 1906, and has discriminated against cotton "splits" made in England, as the law of Feb. 3, 1905, discriminated against cotton prints made in the United States. There is no occasion for any excitement or for littering Manila Bay with American cotton cloth just because it is made with two good selvages. If a mistake has been made, something we do not deny, it is not surprising considering the conditions under which the law was framed and enacted. The members of the House, the Senate and the War Department did their best in regard to it. It was never intended that they should be charged with the responsibility of framing tariff laws for the other side of the earth. When they are charged with that responsibility it must be expected that mistakes will occur, as they will when one man is asked to do the work of two.

This whole cotton "split" matter is a trifling detail, incident to a transition period during which the United States is charged with the guardianship of 10,000,000 people of mixed race, speaking many languages and trained for four hundred years to respect no argument except force. The following item in the same issue of the "Manila Times" that contained a report of Bishop Brent's tirade on cotton "splits" gave an account of a clash between the American authorities and the Filipinos that affords a glimpse of the difficult situation created by the attempt to govern the mixed races inhabiting the Archipelago:

> A strike is on at the Cavite Navy Yard. The Filipinos struck and were promptly discharged by the Navy authorities, and the places of the strikers were taken by Chinese. On Monday two Chinese were put into the hospital by Filipino strikers. One of them had a bad scalp wound and the other was badly beaten up. On Tuesday there was another encounter between a Chino and a Filipino. This time the Filipino was sent to the hospital with a broken arm. Tuesday evening there was a mass meeting of Filipinos at Cavite at which meeting the speakers denounced the American government in the Islands, saying that the Spanish government was much better, that any Filipino was a coward and a cur to work for any American and that any Filipino that did should be the first man shot by their countrymen. All the speeches were in Visayan, and were reported to the commandant of the Navy Yard. The marines are fully prepared for any trouble, having been supplied with an extra supply of ball cartridges.

Forced to carry this daily burden of government in the Philippines the United States is at the same time trying to train the Filipinos to govern themselves. It is announced on the authority of the President of the United States that a representative assembly will be established next year among the Filipinos. Moreover the administration has exerted all its influence to secure the free entry of Philippine products into the United States, the best market on earth. The President urges it in his message and Secretary Taft has been especially active in the effort to secure this great advantage for the Filipinos.

The United States is doing its duty to the world and to the Filipinos themselves by

governing the Philippines with a strong hand, ready at all times to administer force to the inhabitants, the only argument many of them will respect. On the other hand, it is trying to give them free government and the benefits of free entry for their products into the United States. And it is at such a time, when it is the plain duty of every American to give his government every possible aid, not only by acts and words of encouragement, but by avoiding any thing that might embarrass the authorities in the Philippines, it is at such a time that Bishop Brent raises this howl about cotton "splits," appealing to high Heaven for justice, calling for "stern and relentless action" and threatening all sorts of dire consequences, including a reorganization of the government of the United States because of a trifling matter of detail in framing a tariff bill at Washington for the antipodes. There is a well-founded fear in this country that the brown men in the Philippines are not able to govern themselves. Bishop Brent's article in the "Outlook" demonstrates that the white man there labors under that disability.

The Machinery Exhibition of the American Cotton Manufacturers' Association.

Plans are rapidly progressing for the exhibition of machinery and processes at the Philadelphia meeting of the American Cotton Manufacturers' Association in May. This exhibition is to be placed at the disposal of machine builders and others at the cost price for floor space, power and other expenses. The only object is a broadening of the work of the association, bringing textile manufacturers and machine builders together, and affording facilities for demonstrating the merits of machines that could otherwise be but imperfectly discussed in technical papers at the meeting.

Arrangements for exhibits can be made with the manager of the exposition, Thomas F. Baker, 114 Chestnut St., Philadelphia, or S. H. Steele, 377 Broadway, New York.

It is said that in Paterson, N. J., there are more Macclesfield silk weavers than are in Macclesfield itself.

Another Cotton Conference.

The success of the conference of cotton growers and manufacturers at Washington last year has created a general sentiment in favor of continuing these meetings in the future. A step in this direction was taken last month when the committee of the International Cotton Federation, at London, indicated their desire to meet the growers in conference this fall. Arrangements for this conference have not been completed. The place of meeting will, of course, be in the United States. Efforts were made to induce the planters to visit Europe, but this proved impracticable. It was then a case of Mahomet and the mountain, and as a result we may see another delegation of European spinners at a cotton conference in this country. It is to be hoped that in such an event the delegation may be more truly representative of the European cotton industry than was the last one, which had no member from the Continent.

During the year ending Aug. 31, 1906, Continental mills consumed 2,888,877 bales of American cotton; British mills, 2,815,331 bales. The concentration of the British mills makes it much easier for them to act in concert in this as in other matters. The Continental mills are, on the other hand, widely scattered over countries speaking many languages and with many conflicting interests. Nevertheless they have a common interest in the American cotton crop and should be well represented in any delegation visiting the planters.

Wages in Cotton Mills.

According to the census of manufactures for 1905 there were 315,874 operatives employed in the cotton mills of the United States, their wages averaging $304.57 per year. This is 60 per cent. higher than the average wage, $191.04, for the same industry in North Germany, and nearly double the average, $162.72, in South Germany.

During the Australasian wool season of 1905-6, 1,869,455 bales of wool were exported.

The Textile World Record's Annual Report of Mill Construction for 1906.

A substantial increase over 1905 in the number of new textile mills constructed in 1906 is found in every branch of the industry except silk manufacturing. Our report, as summarized in the accompanying tables, showing 303 new mills of all kinds, covers

NEW COTTON MILLS IN 1906.

	No.		Spindles		Looms	
New England						
Connecticut	2		.....		.....	
Massachusetts	5		111,000		2,400	
Rhode Island	6		60,000		20	
	—	13	——	171,000	——	2,420
Southern States						
Georgia	5		38,368		300	
Mississippi	1		.....		.....	
North Carolina	24		169,828		1,250	
South Carolina	7		81,760		2,172	
Tennessee	1		.....		.....	
Virginia	1		5,000		.....	
	—	39	——	294,956	——	3,722
Middle and Western States						
New Jersey	1		.....		46	
New York	3		15,000		.....	
Pennsylvania	15		.....		354	
Indiana	1		.....		.....	
Missouri	1		10,000		240	
Oklahoma	1		2,040		.....	
	—	22	——	27,040	——	640
Total		74		492,996		6,782

the mills built by new companies. The total increase in textile machinery includes these mills and also the extensions of old mills. The record of new mills built by new companies affords, however, an excellent index to the progress of the textile industry.

In new cotton mills the South leads with 294,956 spindles out of a total of 492,996, New England claiming 171,000, or nearly all the remainder. To this must be added the extensions of old mills, for which the figures are not compiled. A careful examination of our reports of these extensions leads us to believe that the total increase of cotton spinning machinery throughout the country in 1906 will not fall below 1,500,000 spindles and may reach 1,750,000 or about 6 per cent. of the total spindles at the beginning of the year. While this is a very substantial growth it is far below the increase in Lancashire, where over 6,000,000 spindles have been added during the last two years. The shortage of help has unquestionably restricted mill building. American machine builders have been driven to their full capacity to supply the demand from new mills and from the old mills replacing worn-out machinery with new. Foreign machine builders have been overwhelmed with orders in their own countries, which has had a tendency to restrict the amount for the American market. The general prosperity in the textile manufacturing industry, coupled with the scarcity of labor, has led to an overhauling of mills and replacing out-of-date machinery with modern devices so that the productive capacity per operative could be brought to the highest possible point. When help was plenty and wages low manufacturers may have thought that it did not matter so much, but with wages high and operatives scarce it is imperative that the greatest possible output should be obtained with the least number of operatives.

An interesting feature of the year's construction is the tendency of the industry to concentrate. Fifty-one per cent. of the new spindles are reported from the Carolinas, while nearly 35 per cent. are reported from Massachusetts and Rhode Island.

NEW WOOLEN AND WORSTED MILLS.

	1906		1905	1904	1903	1902
New England						
Connecticut	4					
Massachusetts	7					
New Hampshire	2					
Rhode Island	8					
Vermont	2					
	—	23				
Middle States						
New Jersey	2					
New York	4					
Pennsylvania	23					
	—	29				
Western States						
Montana	1					
Oregon	1					
Wisconsin	1					
	—	3				
Southern States						
Virginia	1					
	—	1				
Totals		56	38	45	65	46

The woolen industry, with 56 new mills in 1906, shows a substantial increase over 1905, when but 38 new mills were reported. With the exception of the year 1903, when 65 new mills were built, the increase for 1906 is the largest during the last five years. Here, likewise, the additions to old mills have been of a very substantial character, especially in Massachusetts. The general progress of woolen manufacturing in the United States forms a striking contrast to the condition of

the same industry in Canada, where a low tariff has resulted in widespread ruin.

The number of new knitting mills, 103, is but little below the highest in the last five years. The same tendency to concentrate

NEW KNITTING MILLS.

	1906	1905	1904	1903	1902
New England					
Massachusetts	1				
New Hampshire	1				
Vermont	1				
	— 3				
Middle States					
New York	24				
New Jersey	5				
Pennsylvania	34				
	— 63				
Western States					
California	1				
Illinois	1				
Indiana	2				
Michigan	1				
Ohio	4				
Utah	1				
Washington	2				
Wisconsin	5				
	— 17				
Southern States					
Florida	1				
Georgia	2				
North Carolina	11				
South Carolina	1				
Tennessee	3				
Virginia	2				
	— 20				
Totals	103	79	111	105	82

is here shown as in the cotton industry, 63 of the 103 new knitting mills being reported from Pennsylvania, New York and New Jersey.

The depression in many branches of the silk trade is reflected in the decreased number of new mills, 36 for the year, as compared with 53 for 1905. Evidently the silk industry has been extended during the last few years at a rate relatively greater than has obtained in other branches of the textile industry. Another cause that should not be overlooked is the injury to the silk trade caused by overweighting. This is an evil that is found in the European trade as well. It augurs well for the future development of the silk trade in general that the practice is being restricted to its proper limits. With 36 new mills established, and with the imports of raw silk, with one exception, above those of any previous year, the American silk industry is in a fairly prosperous condition. Of the 36 new mills, 32 are claimed by three States, Pennsylvania, New Jersey and New York.

Our report of new mills shows clearly that the textile industry is sharing in the present phenomenal prosperity of the country and is calculated to restrain the enthusiasm of those who would change the policy under which that prosperity has been attained. It is but a few years since all branches of textile manufacturing were prostrated under a low tariff regime, just as the Canadian industry is now. A high tariff has been in force about nine years. It required several years to recover from the effects of the preceding tariff, and now in the year 1906 we find ourselves in the full enjoyment of protection to American industries. Is it not a good time to leave well enough alone?

NEW SILK MILLS.

	1906	1905	1904	1903	1902
Connecticut					
Broad Silks	1				
	— 1				
Massachusetts					
Silk Throwing	1				
Broad Silks	1				
	— 2				
New Jersey					
Broad Silks	4				
Embroideries	3				
Sewing Silk	1				
Silk Throwing	3				
	— 11				
New York					
Ribbons	1				
Gloves	1				
Broad Silks	1				
Sewing Silk	1				
	— 4				
Pennsylvania					
Dyeing	1				
Ribbons	2				
Embroideries	5				
Silk Throwing	5				
Broad Silks	4				
	— 17				
Rhode Island					
Linings	1				
	— 1				
Totals	36	53	49	58	45

COMPARISON OF SPINDLES IN NEW COTTON MILLS FOR THE LAST EIGHT YEARS.

	1906	1905	1904	1903	1902	1901	1900	1899
New England	171,000	100,800	61,184	135,000	347,320	30,000	185,700	315,000
Southern States	294,956	97,920	155,472	281,752	490,256	259,360	1,109,584	669,970
Middle and Western States	27,040	.....	.....	.....	25,000	2,064	11,500	78,000
Totals	492,996	198,720	216,656	416,752	862,576	291,424	1,306,784	1,062,970

COMPARISON OF NEW MILL CONSTRUCTION FOR LAST SEVEN YEARS.

	1906	1905	1904	1903	1902	1901	1900
Cotton	74	33	48	81	68	59	171
Woolen	56	38	45	65	46	53	48
Knitting	103	79	111	105	82	98	109
Silk	36	53	49	58	45	29	43
Miscellaneous	34	42	37	25	21	21	29
	303	245	290	334	262	255	400

The produce of silk cocoons in Austria for 1904 is estimated at 4,763,035 pounds.

New Mill Construction During 1906.

EXPLANATION OF ABBREVIATIONS; 12/05=Expect to start December; 1905, etc.; S=Steam; W=Water Power E=Electricity; D=Dye House.

NEW COTTON MILLS.

CONNECTICUT.

Meriden. Meriden Braid Company. (Office 640 Broadway, N. Y.) $50,000. Benj. W. Collins, president; Horace W. Kingsley, treasurer; William D. Harned, superintendent and buyer. Fancy braids, dress trimmings and woven products. Sell direct. (Started 8/06.) ....

So. Norwalk. J. & J. Cash, Ltd. Narrow fabrics. New mill built as branch of English plant. ....

GEORGIA.

Crawford. Edwards Mills. L. F. Edwards, president and treasurer. Yarns and twines, 8 to 16, 2 to 4 ply. (E.) New building partly up. (To start up about March, '07.) ..... 5,000 ..

Dalton. Elk Cotton Mills. $165,000 J. W. Bowett, president; J. E. Satterfield, treasurer; M. C. Foster, buyer. Ply yarns, 4/14. (S.) (Under construction Oct., '06.) ..... 8,000 ..

La Grange. Elm City Cotton Mills. $250,000. C. V. Truitt, president; J. G. Truitt, vice-president; Fuller E. Callaway, treasurer; Roy Dallis, secretary and manager. Cotton duck. (S.) (Under construction, Oct., '06. Expect to start April, '07.) 10,368 150

Newnan. McIntosh Mills. $200,000 ($150,000 common, $50,000 preferred). W. C. McBride, president; W. A. Steed, secretary and treasurer. Fine white, black and colored yarns. .....10,000 ..

Summerville. Summerville Cotton Mills. $150,000. Jno. D. Taylor, president and treasurer; Ernest Montgomery, superintendent. Duck. (S) (Under construction, Dec., '06.) 5,000 150

INDIANA.

La Porte. La Porte Braiding Mills. $50,000. F. H. Michael, president; F. C. Mann, treasurer; F. W. Macdonald, secretary and manager. Shoe laces. Sell direct. (E) .. ..

MASSACHUSETTS.

Brockton. Star Webbing Co. Findings for shoe trade. 2

Fall River. Foulds Narrow Fabric Co. Reginald A. Foulds, treasurer; Julius L. Lanciault, superintendent. Tapes and braids and all narrow fabrics. (Located in the old White Mill weave shed.) ....

New Bedford. Nonquitt Spinning Co. $1,200,000. Wm. Whitman, president; Leonard C. Lapham, treasurer; Andrew J. Currier, agent. Combed warp yarns. Harding, Whitman & Co., s. agts. (Under construction.) (S.) .....60,000 ..

New Bedford. Page Manufacturing Co. J. W. Knowles, treasurer and buyer. Fine cotton cloth. (Expect to start last of the year.) 51,000 1,400

New Bedford. Taber Mill. $350,000. Frederic Taber, president; Rufus A. Soule, Jr., treasurer. Novelties in fine cotton goods and silks. Sell direct. (S.) 1,000 additional looms to be installed later. 1,000

MISSISSIPPI.

Batesville. Batesville Yarn & Cordage Co. $30,000. C. B. Vance, president; J. C. Price, treasurer; Ben N. Love, superintendent. Cotton rope and twine. Sell direct. (S.) .. ..

MISSOURI.

Kansas City. Kansas City Cotton Mills Co. $400,000 preferred, $400,000 common. Wm. Peet, president; Witten McDonald, vice-president and buyer; E. E. Holmes, treasurer; L. B. Foster, superintendent. 7, 8, 9, 10 and 12 oz. flat duck or single filling duck. (Expect to start Jan., '07.) 10,000 240

NEW JERSEY.

May's Landing. Ramony Mills Co. (377 Broadway, N. Y.) M. J. Warner, president and treasurer; J. W. Shea, manager and buyer. Cotton and union fabrics. (Buy linen and cotton yarns, 12s to 20s.) Warner-Godfrey Co., s. agts. 46

NEW YORK.

Fort Edward. Standard Textile Co. (P. O. address. Glens Falls.) $25,000. Winfred A. Huppuch, president; Walter W. Clark, treasurer; Thos. Cocker, superintendent. Cotton batting and shoddy. Sell partly direct. ....

LeRoy. LeRoy Cotton Mills. $200,000 preferred, $25,000 common stock. Myron C. Taylor, president; P. T. Jackson, Jr., treasurer; Manning Emery, Jr., agent. Black and white twist yarns. 5,000 twister spindles. (D.) (Purchased Am. Matting Co.'s plant; remodelled.) ..... 5,000 ..

Utica. La Tosca Yarn Mill. W. F. Allen, president; J. E. McLoughlin, treasurer and manager; D. W. Gray, superintendent. Combed yarns, 9s to 30 inclusive. Sell direct. (S.) (Owned by Mohawk Valley Cap Factory and La Tosca Knitting Co.) .....10,000 ..

NORTH CAROLINA.

Belmont. Imperial Yarn Mills, Inc. $250,000. A. C. Lineberger, president; D. E. Rhyne, vice-president; R. L. Stowe, secretary, treasurer and buyer; Geo. Howell, superintendent. Yarns, 40s. (E.) (Start Jan. 15, '07.) .....10,316 ..

Bessemer City. Crescent Mills Co. $150,000. C. A. Davis, president; C. E. Whitney, treasurer. Nos. 40-2 ply. (S.) ..... 3,000 ..

Biscoe. Francis Cotton Mills, Inc. $200,000. J. R. Page, president; A. W. E. Capel, treasurer and buyer; W. T. Hurley, superintendent. Yarns, 14-16-20, warps and skeins, single and two ply. (S.) ..... 7,500 ..

Charlotte. Mayes Mfg. Co. $100,000. J. H. Mayes, president; T. E. Moore, vice-president; L. A. Dodsworth, secretary and treasurer; J. L. Mayes, superintendent. 40s to 60s combed and carded yarns. Sell direct. (E.) (Under construction, Nov., '06.) ..... 6,376 ..

Cherryville. Melville Mfg. Co. $125,000. W. A. Mauney, president; M. L. Rudisill, treasurer; D. A. Rudisill, agent; J. S. Carpenter, superintendent. Yarns, 30s to 40s. (E.) (Under construction, will start April, '07.) ..... 5,000 ..

Concord. Concord Braiding Co. $10,000. (Jno. A. Barnhardt and Chas. E. Barnhardt.) Cords, laces and braids. ....

Concord. Franklin Cotton Mill. J. W. Cannon, president; E. T. Cannon, treasurer. 16 warp yarns; 6,000 ring spindles. Cannon Mills, s. agts. (Formerly the Coleman Mill.) ....

Concord. Young-Hartsell Mills Co. $85,000. R. S. Young, president; P. B. Fetzer, vice-president; J. L. Hartsell, secretary, treasurer and buyer; O. L. Wagstaff, superintendent. Yarns, 24/1, warps and beams. (E.) ....

Dallas. Monarch Cotton Mills Co. $75,000. M. A. Carpenter, president; R. S. Lewis, treasurer, agent and buyer; F. H. Robinson, superintendent. Single hosiery yarns, 24s to 30. C. J. Webb & Co., Phila., s. agts. (E.) ..... 5,000 ..

Draper. German-American Company. $1,000,000. B. Frank Mebane, president; A. C. Phelps, vice-president and general manager; Arthur J. Draper, treasurer; W. E. Fearrington, superintendent. Yarns and cotton textiles. (S.) (D.) (To build woolen machinery department; installed 2 sets in lapper room, temporarily.) 22,000 300

Fayetteville. Victory Manufacturing Co., The. $200,000. H. W. Lilly, president; Fletcher M. Cook, treasurer; N. D. Mc-

Neill, superintendent. Print cloth. Davis & Cathrall, 25 Worth St., N. Y., s. agts. (E.) 25,000 800

Gastonia. Clara Mfg. Co. R. P. Rankin, president; C. B. Armstrong, treasurer. 40s yarns. New mill erected, 267 by 80 feet .. 5,000 ..

Gastonia. Flint Mfg. Co. $100,000. G. A. Grey, president; L. F. Grooves, Treasurer; J. R. Withers, superintendent. Yarns, 50s to 80s. (E.) (Under construction, Nov., '06.) ..... 5,000 ..

Granite Falls. Dudley Shoals Cotton Mill Co. $100,000. D. A. Whisnant, president; D. H. Warlick, treasurer and buyer. Yarns, 40s to 60s. (E) (Under construction, start about Aug., '07.) ..... 5,000 ..

Lincolnton. Rhodes Manufacturing Co. $80,000. J. M. Rhodes, president and treasurer; C. W. Rhodes, vice-president; D. P. Rhodes, secretary and general manager. Osnaburgs, duck and heavy drills. (E.) (Under construction, start June, '07.) 5,000 150

Lowell. Peerless Mfg. Co. $100,000. Jno. C. Rankin, president and superintendent; S. M. Robinson, treasurer and buyer. 40s to 60s yarns. Cones, tubes, skeins and warps. (E.) (Start operations about Jan., '07.) .. 5,000 ..

Lumberton. Dresden Cotton Mills. $200,000. R. D. Caldwell, president; H. B. Jennings, treasurer. Hosiery yarn, 12s to 30s. (Start Jan. 1, '07.) ..... 10,000 ..

Monroe. Icemoriee Cotton Mills Co. $125,000. W. S. Lee, president; J. L. Everett, treasurer; Chas. Iceman, general manager. Yarns, hosiery and underwear. Jas. E. Mitchell & Co., s. agts. (S) ..... 5,000 ..

Mt. Airy. Mt. Airy Cotton Mills Co. $100,000. Lee H. Battle, president; F. H. Chamberlain, treasurer and buyer; W. H. Thornbury, superintendent. 30s yarns on tubes and cones and in skeins, 2 to 4 ply. Paulson, Linkroum & Co., s. agts. (E.) .. 5,040 ..

Mt. Holly. Woodlawn Mfg. Co. $80,000. C. E. Hutchinson, president and treasurer; J. M. Springs, vice-president; J. W. Holland, secretary. Yarns in skeins, tubes and cones, 26s to 30s. (E.) ..... 5,000 ..

Raeford. Raeford Power Mfg. Co. $125,000. T. B. Upchurch, president; J. W. McLauchlin, treasurer; W. D. McNeill, agent and buyer. Hosiery cones, from 8s to 16s. Sell direct. (S.) ..... 5,016 ..

Rockingham. Hannah Pickett Mills. $200,000. Robt. L. Steele, president; W. B. Cole, treasurer and buyer. Hosiery yarns, 20s to 30s. (Expect to start Jan. or Feb., '07.) ..... 10,080 ..

Roxboro. Longhurst Cotton Mill. New mill of the Roxboro Cotton Mills plant. 30/2 and 8/3 yarns for trade. (Under construction.) ..... 10,000 ..

Selma. Lizzie Cotton Mills. $200,000. M. C. Winston, president and buyer; L. D. Debnam, treasurer; C. S. White, superintendent. 22 hosiery yarns. (Start about Jan. 1st.) ..... 10,500 ..

OKLAHOMA.

Guthrie. Pioneer Cotton Mills. $150,000. L. N. Beadles, president; Robert Sohlberg, treasurer; J. E. Douglass, general manager and buyer. Twine, rope sash cord. (S.) ..... 2,040 ..

PENNSYLVANIA.

Carlisle. Heilig Bros. Cotton Worsted Co. (Manufacturers cotton fabric.) ....

Milton. Milton Weaving Co. $10,000. John P. Hackenburg, president and buyer; H. R. Frick, treasurer. Tapes and lamp wick. (E) Sell direct. 17

Philadelphia. Aberfoyle Mfg. Co., Cresson St. and Walnut Lane, Germantown. W. T. Galey, Jr., manager; W. H. Willis, superintendent. Fine dress (cotton) goods and shirtings. (Branch of Chester plant.) 201

Philadelphia. American Fabric & Rug Co. $10,000. Gerald Priestman, president; Samuel Hazzard, secretary and treasurer; Fabric rugs. (Buy cotton warps.) Germania Trading Co., N. Y., s. agts. ....

Philadelphia. Baxter, Kelly & Forest, Inc., Jasper and York Sts. Geo. E. Kelly, president; John E. Baxter, treasurer; Wm. H. Forest, secretary; John J. McKenna, superintendent. Cotton plushes. Sell direct. (S.) (D. & F.) (Office 496 Broome St., N. Y.) 10

Philadelphia. Davies, Thomas, Frankford. Upholstery goods and tapestries. ....

Philadelphia. Germantown Braid Company, Stenton and Wyoming Aves. I. M. Koch, president; H. L. Stern, treasurer; W. W. Sibson, secretary. Braids for underwear trade. ....

Philadelphia. Gordon, A. J. & Co. Dellwood Mills, Mascher and Somerset Sts. Upholstery goods and draperies. 8

Philadelphia. Industrial Mills Co., S. E. cor. Mascher and York Sts. $100,000. W. A. Dickel, president; Ivan B. Scoville, vice-president, general manager and superintendent. Silk, cotton and mercerized narrow fabrics. 20

Philadelphia. Margerison, J. H. Turkish towels, damasks, terry cloths, etc. Sell direct. 6 sewing machines. (Plant located at Fox Chase.) 24

Philadelphia. Michle, Andrew J. Bromley Mills, Jasper and York Sts. Hair cloth. Sells direct. (E) 30

Philadelphia. Minnis & Wood, 1543 Ruan St., Frankford. Edwin Wood Royal, superintendent. Mitcheline quilts. Use 30s and 40 warps; 40s and 50s skein yarns 4

Philadelphia. Stenton Mills Co., 1824 Cadwallader St. $25,000. Thomas McNair, president; John G. Campbell, secretary and treasurer. Narrow fabrics, novelties, etc.; silk, cotton and mercerized yarns. Sell direct. 40

Philadelphia. Stringer, William, N. W. cor. Amber and Westmoreland Sts. Cotton laps. 1 card; 1 willow. (G) ....

Philadelphia. Taylor, H. Z., 219 N. 4th St. Shoe and corset laces. 12 braiders. Sells direct. (E) ....

RHODE ISLAND.

Alton. Alton Mfg. Co. $700,000. J. O. Curry, president; C. S. Johnson, treasurer; Chas. W. Shepard, manager and buyer. Trimming laces. Sell direct. (S & W) ....

Coventry. United Lace & Braid Mfg. Co. $100,000. W. L. Preston, president; Miles H. Ray, secretary; C. R. Makepeace, treasurer. Braids, shoe and corset lacings. 50 braiders. Sell direct, Providence. ....

Pawtucket. Burgess Mills. Robert Burgess, treasurer. Finest combed yarns and cloth. New weave shed, 318 by 252 feet; spinning mill, 467 by 101 feet; brick; three stories. (Under construction, Dec., '06.)....60,000 ..

Pawtucket. Reliable Mfg. Co. 25,000. Frank H. Grover, president; Samuel L. Ainscough, treasurer; Frank M. Benedict, superintendent. Spool cotton and glazed yarns, 10/1 to 30/1, 10/2 to 40/2, 12/3 to 60/3. Sell direct. (S.) ....

Providence. Brindle Webbing Co. (Partnership.) Thomas Brindle and David Lyman. Webbing, from 1/2 to 2 1/2 in. wide, also non-elastic and elastic for the garter trade, mostly in white and gray and fancies. ....

Valley Falls. Hesse Mfg. Co. $30,000. Paul F. Hesse, president and superintendent; W. E. Keach, treasurer and buyer. Woven narrow fabrics. 20

SOUTH CAROLINA.

Belton. Belton Webbing Co. $50,000. E. B. Rice, Jr., president and treasurer; David Jennings, agent and superintendent. Tapes, elastic and non-elastic, stay bindings and electric tape. Sell direct. (Buy 24s to 50s single and 2 ply yarns.) (E)..... .. 30

Calhoun Falls. Calhoun Mills. $400,000. W. F. Cox, president and treasurer; P. K. McCully, Jr., secretary and assistant treasurer; Robt. E. Ligon, vice-president. 4-yd. goods. (Capacity of 25,000 spindles.) (E.) (Construction work started Sept., '06.) 15,000 450

Gaffney. Globe Cotton Mills Company. Wm. M. Webster, president and treasurer; W. C. Lipscombe, vice-president and secretary. 14 and 20 coarse ply yarns. ..... 4,000 ..

Greenville. Vardry Cotton Mills. $75,000.

L. M. McBee, president and treasurer; J. W. Roberts, superintendent. High grade black, white and blends, 20s to 30s 2-ply warps. (D.) (S. & W.) ..... 5,000 ..

Pacolet. Pacolet Mfg. Co. No. 5 Mill. Brown sheetings and drills. 32,760 942

Pickens. Pickens Mill. $250,000. W. M. Hagood, president and treasurer. 4-yd. goods, 48 by 52. Woodward, Baldwin & Co., N. Y., s. agts. (Under construction, start May, '07.) 15,000 450

Rock Hill. Aragon Cotton Mills. $350,000. Alexander Long, president and treasurer; Ira B. Dunlap, secretary. Cotton cloth. (Under construction.) 10,000 300

TENNESSEE.

Memphis. American Bag Co. $250,000. L. D. Falls, president; W. H. Carter, vice-president; Hill Bond, secretary and treasurer. .. ..

VIRGINIA.

Emporia. The Emporia Cotton Mills, Inc. $25,000. T. Ashby Blythe (Phila.), president; W. T. Tillar (Emporia), treasurer. Yarns, 8s to 10s. R. A. Blythe, Phila., s. agt. ..... 1,970 ..

CANADA.

Ontario, Hamilton. Eagle Spinning Mills. Louis Carter, superintendent. Hosiery yarns. (Start about Jan. 1, '07.) (New buildings erected, 100 by 136 feet, two stories.) (E) ..... 5,000 ..

NEW WOOLEN MILLS.

	No. Sets & Width Cds	Looms

CONNECTICUT.

Central Village. Central Worsted Co., Inc. $50,000. Geo. S. Mawhinney, president; Charles Bragg, treasurer, agent and superintendent; Chas. E. Barber, vice-president; Henry K. Lorenz, secretary. Worsteds and cotton worsteds. (D) (S) Start operations Feb. 1, '07 30

Putnam. Pine Tree Worsted Co., $25,000. Geo. J. Torrance, president; Robert E. Torrance, treasurer; Jere Emery, agent and superintendent. Cotton worsteds. Sell direct. (E)..... 25

Rockville. Minterburn Mills Co., The. $300,000. Thos. W. Sykes, president; Wm. Maxwell, treasurer. Worsteds and some woolens. (Under construction Nov. '06.)

Rossville. Peerless Woolen Mills. $100,000. W. H. Reddick, superintendent and buyer. Cotton warp cassimeres. 7,800 wool spindles. (D) (E) Sell direct. (Start 1/07) 11 200

MASSACHUSETTS.

Amesbury. Hartley Loop Weave Co. Geo. H. Briggs, president and treasurer. Carpets and art squares.

Clinton. Litchfield Worsted Mills. W. V. Brodmerkle, proprietor. Worsteds for men's wear; finish. James Talcott, s. agt. (S)..... 21

Farnumsville. Excelsior Mills, The. $300,000. Geo. Otis Draper, president; C. A. Root, treasurer; W. J. Brady, agent; H. S. Wood, superintendent. Men's wear worsteds. Sell direct, and L. Bachman & Co., N. Y., s. agts. (S & W) (D) 130

Franklin. Linnehan Worsted Co., The. William Sportman, superintendent; J. W. Linnehan, buyer. Fine worsteds for men's wear. (S) (9/06) 34

Monson. Field Worsted Mill. Men's wear, worsted and cotton worsted. G. W. Field, buyer (S) 12

Spencer. Priscilla Woolen Co. $3,000. Arthur Monroe, president; Simon Taylor, treasurer, superintendent and buyer. Shoddies (raw stock). Sell direct. (W) ..... 2 ..

West Millbury. Millbury Worsted Co. C. A. Root (Uxbridge), buyer. Dress goods and worsteds. L. Bachman Co., s. agts. (S & W) (Operate Ramshorn Mill.) 20

MONTANA.

Great Falls. Manchester Woolen Mills, Inc. $50,000. Sam H. Wood, president and buyer; A. E. Canfield, treasurer; Geo. Pikell, superintendent. 30 in. cassimeres, blankets, flannels, yarns, etc. Sell direct. (S) (D) (8/06) 1 6

NEW HAMPSHIRE.

Franklin. Hayes, Benjamin F. Commission weaving. Satinets, woolens, worsteds, fancy and plain. F. R. Milson, Boston, s. agt. (W).. 2 14

Newport. Brampton Woolen Co., The. Col. Seth M. Richards, president; Col. Sam D. Lewis, vice-president; Hon. John McCrillis, treasurer; Vincent J. Brennan, Sr., general manager. an 8 set mill.) 4 50
Sackings and dress goods. (Propose making

NEW JERSEY.

Millville. James E. Smith, 126 S. 4th St. Wool Smyrna rugs and carpets. Also make old carpets into rugs. 7

Trenton. Columbia Carpet & Rug Co. $125,000. Anthony Hankey, president; Frank Geyer, agent, treasurer and buyer. Smyrna and Axminster carpets and rugs, also women's hosiery. Sell direct. (S) 104

NEW YORK.

Camden. Camden Woolen Mills. Henry W. Lindley, proprietor. Fine woolen blankets. Converse, Stanton & Co., N. Y., s. agts. (D) (S) (In building formerly run by the Camden Textile Co.) 1 5

Falconer. Lynndon Worsted Co., The. $75,000. (Formerly Falconer Worsted Mills.) R. D. Stoeltzing, president; John Ahlstrom, secretary and treasurer. Worsted yarns. 3 sets; 14 spinning frames; 7 twisters; 3 combs. ....

Jamestown. Greenwood Worsted Mills. Enoch Greenwood, president; Geo. E. Feather, vice-president; J. E. Pitts, secretary and treasurer. Fine dress goods. ....

Little Falls. Little Falls Felt Shoe Co. $50,000. Irving E. Stacey, president; Frank F. Stacey, treasurer; Gustav A. Freygany, superintendent. Felt shoes and slippers. (E) ....

OREGON.

Albany. Bannockburn Mfg. Co. $200,000. Charles Coopey, president; H. M. Grant, treasurer. Men's and women's wear. 1 shoddy picker. (D & F) (W) (To rebuild plant destroyed by fire, '05.) 6 30

PENNSYLVANIA.

East Brady. East Brady Woolen Co. $50,000. C. P. McCafferty, president; R. W. Steele, treasurer, superintendent and buyer. Shoddy, yarns and blankets. Sell direct. 4 pickers. 4 10

Philadelphia. Baltic Company, Unity & Leiper Sts. Thomas Holroyd, superintendent. Dress goods. Sell direct. 8

Philadelphia. Bolton Spinning Co., Howard & Berks Sts. Jos. Wallworth, president; Thos. Crompton, treasurer; William G. Henry, secretary. (Purchased H. B. Farrell plant.) ....

Philadelphia. Brackney, Butterworth & Co., Unity and Leiper Sts., Frankford. Cotton and worsted dress goods. 12

Philadelphia. Columbia Rug Co., 2218-2220 Martha St. W. Greenhalgh, prop. Jute, rag and glazed rugs and carpets. ....

Philadelphia. Devonshire Woolen Mills, S. W. Goldsmith, proprietor, Oxford and Josephine Sts., Frankford. Woolen and worsted goods. Sell direct. Office 925 Chestnut St. 30

Philadelphia. Industrial Worsted Company, Inc., Main St., Manayunk. $10,000. A. Patchett, president; M. Patchett, vice-president; W. Patchett, treasurer and superintendent. Single and two fold worsted yarns to 2/32s; 2 sets drawing; 2,000 spindles. (Operating old Dewhirst & Broadbent plant.) ....

Philadelphia. Kerr, Saylor & Co., 1822-28 Cadwallader St. "Kerrek" Brussels carpets and rugs. Sell direct. 8

Philadelphia. Landenberger Manufacturing Co., The, Howard St. and Columbia Ave. $25,000. C. H. Landenberger, president; C. H. Landenberger, Jr., treasurer. Women's wear. 50

Philadelphia. Lucania Worsted Co. (W. E. Johnys), Oxford and Josephine Sts., Frankford. Cotton worsteds. Sell direct. 32

Philadelphia. Marsden & Bloom. Bromley Mills, Jasper and York Sts. Cotton and woolen goods, men's wear. 14

Philadelphia. Monarch Rug Company, Unity and Leiper Sts., Frankford. Joseph R. MacElroy, president and superintendent; F. G. Barrett, treasurer. Axminster rugs. Sell direct. 15

Philadelphia. O'Neill, Wm., Oxford and Josephine Sts. Leased floor formerly occupied by Philadelphia Moire & Silk Finishing Works. Art squares. Sell direct. 6

Philadelphia. Reno Manufacturing Co., Oxford and Josephine Sts., Frankford. C. P. McConbille and John Hasley, Jr., proprietors. Mr. Hasley, superintendent and buyer. Cotton and woolen men's wear. (Use 2/20 and 2/26 cotton yarns.) 24

Philadelphia. Riddell, F. & J., Davenport Mills; Mascher and York Sts. Cotton worsteds and dress goods. 30

Philadelphia. Riley & Schwartzer, Davenport Mills, Mascher and York Sts. Men's wear. 10 looms. (Formerly plant of Edward Riley.).... ..

Philadelphia. Rowland Worsted Mills, Allegheny Ave. and Emerald Sts. (Cleveland Worsted Mills, Cleveland, Ohio.) E. K. Harrison, superintendent. 11,460 worsted spindles; 6 worsted cards; 4 combs. ....

Philadelphia. Scott, Potter & Howard. Cope Mills, Wayne Junction. Harry Potter, superintendent. Serges, suitings and novelties. H. G. Howard, buyer. Sell direct. 22

Philadelphia. Wellington Worsted Mills, Cooper Lucas & Creamer, Wayne Junction. E. S. Creamer, superintendent. Men's wear dress goods. Meinhardt & Co., N. Y., s. agts. 40

Philadelphia. Westmoreland Mfg. Co., 2627 Mutter St. Thomas Whitehead, proprietor. Rain cloths. Sells direct. 8

Philadelphia. Yorkshire Worsted Mills, No. 2, Coral and Adams Sts. Paul Uhlig and Messrs. Miller & Pleet. Men's wear worsteds. Buy 2/30 to 2/40 worsted yarns. 66

Wallingford. Fearless Textile Co. Arthur Elston, general manager. Woolens, worsteds, broadcloths, cloakings, dress goods. 3 combs; 3 cards; 1,800 worsted spindles. (Bradford system.) Sell direct. (D) (S & W) (Office 817-819 Broadway, N. Y.) 34

RHODE ISLAND.

Manville. Bateman Mfg. Co. Ladies' dress goods. J. Bateman, buyer. ....

Manville. Manville Worsted Co. $100,000. August Dont, president; A. Crepeau, treasurer. V. Cote, buyer. Women's dress goods. ....

Pascoag. Hawthorne Worsted Co. Cotton worsteds. (New buildings erected.) 30

Providence. Priscilla Worsted Mills. $30,000. Jacob W. Walder, Paterson, N. J.), president; David S. Seaman, treasurer; Thomas Armstrong, superintendent. Worsted yarns. 1,000 spindles. ....

Providence. Snowdon Worsted Mills. $50,000. Jas. W. Greaves & John Reid, Agnes St. ....

Washington. Narragansett Worsted Co. Adolf G. Kurze, president; Otto A. Kurze, treasurer and buyer; Austin T. Levy, agent. Worsted goods for men's wear. Sell direct. (W) 20

Woonsocket. French Worsted Company, The. $400,000. Charles Tiberghien, president; Paul Tiberghien, treasurer; A. J. Pothier, acting treasurer and secretary. French worsted yarns, all sizes. 10,000 worsted spindles. (Expect to start April, '07.) ....

Woonsocket. Selkirk Mills. (Management River Spinning Co.) Woolen and cotton dress goods... 62

VERMONT.

Bennington. Cooper Mfg. Co. (Yarn mill.) 2,100 mule spindles; 2 garnetts; 1 shoddy picker. .... 8 ..

Ludlow. Jewell Brook Woolen Co. $100,000. Geo. P. Levey, president; Geo. W. Raymond, treasurer; Jas. S. Gill, superintendent and buyer. Overcoatings and cloakings. L. F. Dommerich & Co., N. Y., s. agts. (D & F) (S & W) 4 24

VIRGINIA.

Manchester. Virginia Rug & Drugget Co. (Office, 1321 East Cary St., Richmond, Va.) Oriental rugs. Robt. M. Smith, president; W. W. Smith, vice-president and treasurer; Robt. D. Smith, secretary; H. W. McKee, superintendent. High grade Smyrna rugs and specialties. (Buy 30/2 and 8/3 cotton yarns, dyed black or dark slate color. Also woolen yarns.) 12

WISCONSIN.

Waupaca. Waupaca Felting Mills. $50,000. Isiah Boorse, president; W. A. Proctor, treasurer and superintendent. Felt hat bands. Sell direct. (D) (W) ....

CANADA.

Ontario, Milverton. J. G. Grosch Felt Shoe Co. J. G. Grosch, president; W. H. Grosch, treasurer; S. J. Grosch, superintendent. Felt shoes. 8 sewing machines. Kilgour-Rimer Co., Winnipeg, Man., s .agts. (D) (S) ..... 1 ..

Ontario, Peterborough. Brinton Carpet Company, The, of aCnada. G. P. Preen, manager. Brussels, Wilton and Axminster carpets and rugs. Office and salesrooms, 28 Wellington St., West, Toronto. ....

NEW KNITTING MILLS.

No. Ktg. Machines

CALIFORNIA.

Anaheim. South California Knitting Works. William Isenberg, president and treasurer; Math. Isenberg, superintendent. All kinds of knit goods. 12 sewing machines. Sell direct. (E) 8

FLORIDA.

Lake City. Lake City Mfg. Co. $10,000. J. C. Sheffield, president; F. F. Barden, treasurer; G. H. Borger, superintendent and buyer. Women's undervests. Kohn Bros., N. Y., s. agts. (S) 30

GEORGIA.

Dalton. Eagle Hosiery Mills. $10,000. F. C. Bivings, secretary, treasurer and general manager. Ladies' black hem top hose. 2 sewing machines; 6 loopers. (D) (S) (Start Jan., '07.) 30

Rockmart. Rockmart Hosiery Mills. $10,000. Jos. Long, president; Jos. Heaton, treasurer; W. C. Curtis, superintendent. Men's half hose. (W. C. Curtis and directors, buyers.) (S) (D) (Start about Feb., '07.) 25

ILLINOIS.

Chicago. Lorenz, Richard, 1132 Lincoln Ave. Sweaters, cardigan jackets and hosiery. 9 sewing machines. (Salesroom 167 Dearborn St.) 14

INDIANA.

Fort Wayne. Cramer Knitting Mills. $150,000. Geo. B. Cramer, president; Wm. H. Cramer, secretary and manager; W. P. Drumheller, superintendent. Fine ribbed underwear for men, women and children. N. Y. office, 72 Leonard St. ....

Logansport. Logansport Underwear Co., The. $15,000. Dennis Uhl, president; Wm. C. Uhl, vice-president; Wm. F. Schnelle, secretary, treasurer and general manager; H. B. Lyons, superintendent. High grade men's union underwear exclusively. Sell direct. 18 sewing machines. (W) (8/06) 6

MASSACHUSETTS.

Springfield. Potter Knitting Company. $75,000. C. B. Potter, president, treasurer and buyer. Infants' and children's knitted underwear. 35 sewing machines. Sell direct. (E) 40

MICHIGAN.

Middleville. Thornapple Knitting Co. $125,000. E. A. Clements, president and buyer; H. M. Liesveld, treasurer. Men's cotton and wool ribbed underwear. Sell direct. Robischon & Peckham, N. Y., s. agts. 25 sewing machines. (S & W) (Buy cotton and merino yarns.) 30

NEW HAMPSHIRE.

Keene. Monadnock Hosiery Co. ....

NEW JERSEY.

Newark. Mohn, Mrs. K., 446 So. 7th St. German hosiery, sweaters, etc. 3

New Brunswick. The Interwoven Knitting Company. $125,000. John W. Meddler, secretary and manager. Men's and ladies' hosiery. Sell direct. 60

Paterson. Paterson Knitting Mills. Hamilton Mill, Mill St. (A. Kubrinets and S. Solte.) F. W. Herington, general superintendent. Fleeced lined underwear. One winder, one napper and sewing machines. 2

Riverton. Argood Hosiery Co. $25,000. (East Riverton.) C. Sylvester, president and treasurer; J. H. LeConey, vice-president and manager. Ladies' and children's fine, plain and fancy hosiery. (Buy 18 to 20 cotton yarn.) Sell direct. (Gas.) 21

Trenton. Columbia Carpet & Rug Co. Women's hosiery. 5 loopers. (Also carpets and rugs.) 50

NEW YORK.

Amsterdam. Fownes' Bros. Co. Gloves. .....

Broadalbin. Broadalbin Knitting Co. Built new mill, replacing plant destroyed by fire. Equipped with 6 sets cards; 1,800 cotton spindles; 60 sewing machines. 30

Brooklyn. Bryant & Gastiger, 408-410 Berry St. Shaker sweaters, sweaters, cardigan jackets and toques. 10 sewing machines; 2 loopers; 2 spoolers. (E) (Located in the old Plate & Clark building.) 15

Brooklyn. Chester Knitting Works. Aaron Meislin, 51 Osborn St. Woolen and worsted sweaters. 3

Brooklyn. Gilinsky, S., 59 Meserole St. Sweaters and fancy knit goods. 1 sewing machine. 4

Brooklyn. Korz, Jacob, 912 Flushing Ave. Stockings, sweaters, jackets, etc. 1 sewing machine. 5

Brooklyn. U. S. Knitting Works, A. Brown, 126 Boerum St. Sweaters and fancy goods. 1 sewing machine. 3

Capron. New Hartford Knitting Co. C. W. Healey, president and treasurer; John C. Fogerty, manager. 25 sewing machines. Sell direct. (S) 8

Clayville. Clayville Knitting Co. $250,000. W. T. Baker, president; Quentin McAdam, treas.; J. W. Allis, vice-president; Geo. Vosburgh, superintendent. Vellastic rib and fleece shirts and drawers. 200 sewing machines. Utica Knitting Co., s. agts. (D) 100

Cohoes. Yale Textile Co. (Bennett & Lewis.) Men's, women's and children's ribbed shirts, drawers and union suits. 14 sewing machines. Sell direct. 6

Crown Point. Riverside Mills, The. J. S. Dodds, proprietor; W. H. Spanswick, superintendent. Knit specialties. Messrs. Dodds and Spanswick, buyers. W. H. Burgess & Co., New York, s. agts. 22 sewing machines. 10

Falconer. Falconer Knitting Co. Gilbert L. Davis, Murray H. Davis, proprietors. Wool and worsted hosiery. 1 sewing machines. Sell direct. (S) 4

Highland. Highland Knitting Mill. J. K. Mueller. High grade sweaters, coats and gloves for men, ladies, boys and juveniles. Wilfred Grey, 35 N. 9th St., Phila., s. agt. .....

Jeffersonville. The Jefferson Knitting Company. J. Rubinstein, president; Sam Gilinsky, treasurer; Henry Gilinsky, superintendent. Men's, boys', ladies' and infants' knit goods. 3 sewing machines. Sell direct. 12

New Hartford. Eerose Knitting Co. A. B. Baker, treasurer. Toques. (Electric motor.) (Capacity 20 doz. per day.) 3

New York. Ocean Bathing Suit Co., 29 W. Houston St. Installed knitting machines. Make knitted bathing and gymnasium suits. Sell direct. (Buy worsted and cotton yarns.) .....

New York. Sobel, H., 11 Pitt St. Woolen and worsted sweaters and goft vests. 3

Oriskany Falls. Okana Knitting Co. A. W. Reynolds, president; E. D. Hatheway, vice-president and superintendent; L. W. Hatheway, secretary; H. H. Hatheway, treasurer and buyer. Men's two piece suits and union suits. Sell direct. (S & W) (D) .....

Oswego. Brooks Knitting Co. Brooks patent face protector and knitted specialties. M. W. Brooks, interested. 3 sewing machines. 2

St. Johnsville. Snell, Geo. D. Ladies', men's and children's seamless hosiery. (Buy 8s to 40s white and mixtures, on cones, 16-22 black). Sell direct. (S) 15

Stittville. Atwood & Buell. Gauze goods. Capacity, 175 doz. per day. .....

Utica. Robischon, M. F. & P. J. Knit goods. Men's ribbed cotton underwear. .....

Waterford. Harmony Knitting Co. $60,000. Jas. H. Shine, president; E. I. Goodrich, 1st vice-president; Edward Penrose, 2d vice-president; Thomas Breslin, treasurer; Thomas Kilduff, superintendent. Men's and ladies' elastic rib, natural wool and camel's hair. Sell direct. (D) (S, W & E) (Formerly the plant of the Clover Mill.) .....

West Haverstraw. Adler's Knitting Mill. Shawls. ..

NORTH CAROLINA.

Drexel. Drexel Hosiery Company. $25,000. C. S. Berry, president; P. E. Berry, treasurer and buyer. Ladies' plain and ribbed goods, men's half hose and children's ribbed hose. 2 sewing machines. (D) 50

Goldsboro. Goldsboro Knitting Mills, Inc. $30,000. Geo. C. Royall, president; A. W. Kornegay, secretary and treasurer; A. L. Bassett, superintendent. Half hose and ladies' hose. Treasurer and superintendent buyers. (S) (D) 50

Greenville. Commercial Knitting Company. $50,000. W. S. Atkins, president; W. H. Dail, Jr., treasurer; L. D. Wade, general manager. Ladies' fine bleached underwear. 25 sewing machines. Lindsay J. Riggins, New York, s. agt. (Bl) (S) (In building formerly occupied by the Greenville Knitting Mills.) Added a bleachery and changed from gasoline to steam power.) 14

Haw River. Regina Hosiery Company. $25,000. J. A. Long, president; W. H. Childrey, treasurer, secretary and general manager. Women's seamless hosiery. 1 sewing machine. Sell direct. W. H. Childrey, buyer. (Gasoline.) (To add 30 more machines.) 10

Hickory. Hickory Hosiery Mills. $15,000. C. C. Bost, president; W. P. Clive, treasurer; J. A. Clive, superintendent. E. B. Crane, N. Y., s. agt. 1 sewing machine; 6 loopers. (D) 27

Lexington. Yadkin Knitting Mills Co., The. $15,000. J. D. Grimes, president; F. N. Patterson, treasurer, agent and buyer. Ladies' Maco foot hose, 200 needle. 2 sewing machines. Hinchman, Vezin & Co., s. agts. (F) (E) 45

Selma. Selma Knitting Mills. $25,000. M. C. Winston, president; R. S. Beavers, superintendent. Ladies' and half hose, 176 needles; cotton. President and superintendent, buyers (Buy 11s, 12s, 15s, 16s, 40/1 ply splicing, mule and ring spun yarn.) (Dyeing and finishing machinery to be installed next year.) (S) 20

Statesville. Bradford Knitting Mill, Inc. $25,000. Eugene Morrison, president; C. S. Tomlin, vice-president; J. A. Bradford, secretary and treasurer. Hosiery. Sell direct. (E & S) (D) Expect to start Jan 1, '07.) 50

Tarboro. Tarboro Knitting Mills, Inc. $50,000. Job Cobb, president; Geo. Howard, treasurer; C. W. Jeffreys, agent and general manager. Women's hosiery. Sell direct. C. W. Jeffreys, buyer. 5 sewing machines. (S) 74

Vaughan. Vaughan Hosiery Co. R. S. Spiers, superintendent and buyer. Black oxidized or lisled ribbed hose, 5 to 9 1/2, also 108 needle ladies' grey and half hose. 3 sewing machines. (Purchased the Petersburg Hosiery Co.'s plant and added new machinery.) 75

Zebulon. Zebulon Hosiery Mills. $8,000. T. J. Horton, president and superintendent; J. D. Horton, treasurer. Seamless hose. (Use yarns 16s to 18s.) (S) (D) (Under construction Dec., '06.) 25

OHIO.

Bowling Green. Monarch Underwear Co., The. $10,000. R. J. Eberly, president and treasurer. R. D. Roper, secretary and general manager. Men's union suits. Sell direct. (G) .....

Cleveland. Federal Knitting Mills Co. 600-610 Huron Road. Harry B. Richman, president; Louis H. Hays, vice-president; Herbert G. Goldberger, secretary. Shawls, hoods, toques, skirts, fascinators, novelties. .....

Cleveland. Neuman, Louis. Cleveland Knitting Mill, 252 Princeton St. Fancy woven shawls. 4

Cleveland. S. Shlesinger Knitting Co., 5701-13 Euclid Ave. $65,000. S. Shlesinger, president and treasurer. J. C. Sampliner, buyer. Fancy knit goods. 18 sewing machines. (E) 20

PENNSYLVANIA.

Berwick. Berwick Hosiery Mills. Robt. E. P. Sult, proprietor. Men's half hose (use cotton yarn, 12s, 14s, 50s, 75s). Ellis Bros., Phila., s. agts. (S & E) 9

Bristol. Radcliffe Hosiery Mill. E. Sutro & Son. Hosiery. Branch of Phila. plant. .....
Brownstown. Conestoga Hosiery Company. $4,000. L. K. Leslie, president; A. V. Walter, treasurer; W. E. Snader, superintendent and buyer. Half hose. (Use 9s, 11s, 40s yarn.) H. S. Meyer & Co., St. Louis, Mo., s. agts. 12
Harrisburg. Wellknit Hosiery Co. (W. G. Starry. E. F. Slear). Hosiery (original design and sanitary nature) for men, women and children. Sell direct. (E) 40
Hyde Park. (Bernhart's P. O.) Light Bros. & Co. Chas. C. Miller, president; Robt. I. B. Light, supt. Infant's and men's fancy hosiery. Gordon B. Bradley, N. Y., s. agt. 2 sewing machines. (S).. 30
Eden P. O. United States Knitting Co. Silk hosiery. 7 sewing machines; dye and finish. J. C. Keeney, 63 Leonard St., N. Y., s. agt. Wm. Rumpf, buyer. 24
Lebanon. Kreider, A. R. & Bro. Ladies' and men's hosiery. (Branch of Annville plant.) .....
Manheim. Manheim Knitting Co. A. K. Kauffman, president; Chas. S. Witmyer, secretary. Ladies' and misses' Swiss cotton underwear. Use 10s to 22s yarns. 6 sewing machines. (Bl & F) (S) 8
Mohn's Store. Hornberger, A. S. & Co. Swiss ribbed shirts. A. S. Hornberger, agent and buyer. 3 sewing machines. (W & S) 5
North Wales. Tonner, William. Ladies' cotton hosiery, 200 needles. 1 sewing machine; 2 loopers. Sell direct. 10
Oley. Oley Knitting Mills. $6,000. I. S. Stahr, president; I. M. Bertolet, treasurer; F. L. Yoder, superintendent. Misses' hosiery (use 10s, 11s and 34s yarns.) (S) 20
Philadelphia. Bood, Ernest, Jasper and Thayer Sts. Men's, women's and children's fine gauge hosiery. Sell direct. 60
Philadelphia. Braithwaite, William, 5028 Wakefield St. Ladies' coats, sweaters, doll's fancy knit goods. 1 sewing machine. Sell direct. 7
Philadelphia. Derby Knitting Mills, 1214 Crease St. Wallace Wilson, proprietor; Wm. L. Wilson, manager. .....
Philadelphia. Dunwoody Hosiery Mills, 3719 Filbert St. Wm. B. Dunwoody. Women's fine seamless cotton hosiery. Sells direct. (S) (F) 2 loopers; 1 welter; 2 sewing machines. (Buy 40/2 Combed Egyptian.) 20
Philadelphia. Haddon Hosiery Co., 2731 No. 6th St. Hosiery 5
Philadelphia. Hunt, Roland, Westmoreland and Collins Sts. Ladies' full fashioned fine gauges, cotton and lisle hosiery; bleach and finish. Parks & Muckle, N. Y., s. agts. (Buy 2/60 to 2/80 combed and mercerized single 28s to 50s combed yarns.) 12
Philadelphia. Lehigh Knitting Mills, Jasper and Orleans Sts. Oscar Schwind, Richard Schletter and Richard Reinhold, props.. Fine silk hosiery. 3 sets full fashion machines. Sell direct. .....
Philadelphia. Munich, F. E., Jasper and York Sts. Albert Pidgeon, superintendent. Ladies' fine gauge cotton and lisle seamless hosiery. 2 sewing machines. Sell direct. (Buy 16s to 80s cotton on cones.) 166
Philadelphia. Rapp, William, 1748 Fawn St. Cardigan jackets, sweaters, etc. .....
Philadelphia. Scotch Headgear Knitting Mills, 1427 Catharine St. Cohen & Marku. Children's knitted caps, toques, etc. 2 sewing machines; 2 winders. (Use 2/10 cotton, 2/18 and 2/16 worsted yarn.) Sell direct. 208 Wooster St., N. Y. Samuel Marku, buyer; Nathan Cohen, manager. 8
Philadelphia. Southwark Hosiery Co., 11th and Catharine Sts. Wm. F. Arbogost, superintendent. Ladies' hose and men's half hose. Use 14, 18 and 24 cotton yarns; 11 loopers. Sell direct and C. G. Culin, N. Y., s. agt. Thos. W. Burch, buyer. (Buy 14s, 18s, 24s yarn.) 53
Philadelphia. Wissinoming Hosiery Mills, 5719 Walker St. Frank J. Maloney, manager. Cotton and mercerized ladies' hose. (Buy 16 to 70 yarns.) 3 loopers; 1 sewing machine. Richard C. Maddock, 527-529 Bourse, Phila., s. agt. 25
Philadelphia. Wolstencroft, Harry, 2731 No. 6th St. 176 needles. Half hose. Richard Maddox, Phila., s. agt. (Installed machinery for embroidering goods made.) 30
Reading. Eclipse Knitting Company, 8th and Franklin Sts. Ladies' Swiss ribbed under garments. .....
Reading. Metropolitan Knitting Mills. Men's and ladies' cotton, lisle and mercerized 176, 188, 200 needle hosiery. A. J. W. Baker, buyer. Sell direct. (S) (Buy 10s to 60s yarn.) 50
Reading. Quality Knitting Mills Co., 15 S. Front St. C. R. Heizmann, president and buyer; Horace Barr, treasurer; J. Ruth, superintendent. Cotton hosiery. 2 loopers. (S) 21
Reading. Terry Fashioned Hosiery Co. Full fashioned half hose. (New mill, 130 by 80 feet, under construction, Nov., '06.) .....
Royersford. George Thomas and David McMullin. Ladies' and infants' hosiery. 8 ribbers; 1 welter; 4 loopers. Wilfred Grey, Phila., s. agts. (E)..... 20
Shenandoah. Williams, T. T. Ladies' Swiss vests. 3 sewing machines. 5
Spring Forge. Penna Knitting Mills Co. $10,000. Mr. Dickenson, president, superintendent and buyer. P. H. Hershey, treasurer. Children's hose. Sell direct. (D & S) 10
Tunkhannock. Oxbow Knitting Mill. T. Wilkinson, proprietor. Worsted sweaters, exclusively. (Use 3/14, 4/13, 4/15 worsted.) 1 sewing machine. Keeney & Brown, s. agts. 2
York. Buck, Samuel & Sons Co. Samuel Buck, Sr., president; William Buck, treasurer; Samuel Buck, Jr., superintendent and buyer. Ladies' fancy cotton and lisle hosiery. Sell direct. (E) 3 sewing machines. 8
York Haven. New Cumberland Knitting Co. Half hose. 12 loopers; 12 ribbers. (Branch of mill at New Cumberland, where all business is done.) .. 50

SOUTH CAROLINA.

McMillin's Mills. McMillin Hosiery Co. $50,000. A. C. Johnson, president and buyer; Curtis McMillin, treasurer. Men's and ladies' hosiery. (W) .....

TENNESSEE.

Clinton. Magnet Knitting Mills. $50,000. S. M. Leath, president; W. W. Underwood, secretary and treasurer; Paul F. Vogel, manager and buyer. Cotton, lisle and silk seamless half hose. 12 ribbers; 12 loopers; 2 embroidery machines. Sell direct and agents. (Buy yarns.) (D & F) (S) New buildings erected; main building, 140 by 45 feet, 2 stories and additional 138 by 45 feet, one story.).. 60
Johnson City. Watauga Hosiery Mills. $10,000. L. Whitney Wood, president and buyer; L. P. Wood, treasurer and superintendent. Misses' ribbed hose. (Buy mule spun yarns, 20s, 30s, 40s.) Sell direct. (S) 20
Loudon. Loudon Hosiery Mills. $50,000. R. H. Bell, president; C. H. Bacon, treasurer and buyer; John Walton, supt. Men's, women's and children's hosiery. Lyman & Clarke, N. Y., s. agts. (D & F) (S) 20

UTAH.

Salt Lake City. Ensign Knitting Company. $50,000. Fred Stauffer, president; James W. Saville, treasurer; Samuel G. Spencer, general manager and buyer. Woolen and cotton hosiery, sweaters, golf jackets and general knit goods, for men, women and children. Sell direct. (E) 45

VERMONT.

Northfield. Vermont Hosiery & Machinery Co. $200,000. Henry L. Field, president and buyer; F. W. Dalton, treasurer; J. H. Frost, superintendent. Men's cotton half hose. I. P. Graff & Co. and F. O. Cary, s. agts. (Successors to Scott Stocking Mills, Bennington, Vt.) Above branch mill. .....

VIRGINIA.

Portsmouth. Bethel Hosiery Mill. (Branch mill. Parker Hosiery Mill & Dye Works.) New building erected, 75 by 32 feet, one story, brick. 25 ribbing and 10 looping machines. (E) 25
Woodstock. Woodstock Knitting Co. $50,000. W. S. French, president; H. B. Chapman, treasurer; Joseph W. Leafe, secretary, manager and buyer; Men's, women's and children's ribbed seamless hosiery. 2 sewing machines. Sell direct. H. J. Farren, Phila., s. agt. (S) (D) 80

WASHINGTON.

Seattle. German American Knitting Factory. $100,000. H. W. Schoebel, president and manager; M. Cameron, secretary; C. C. Filson, treasurer. Men's and ladies' sweaters, hunting jackets, lumbermen's socks, etc. .....
Seattle. Saxony Knit Goods Co., The, 81 Marion St. $70,000. Geo. O. Sanborn, president and buyer; Chas. F. Nickels, treasurer; H. Sultan, vice-president. Cardigan ackets, sweaters, jer-

seys, bathing suits, men, women and children. 7 sewing machines. Sell direct. (E) 14

WISCONSIN.

Ashland. Ashland Knitting Mills. $10,000. C. N. Cramer, president; C. F. Latimer, treasurer; J. M. Banker, secretary, general manager and buyer. High grade family hosiery, worsted and cashmere. 4 loopers; 4 ribbers. Gasoline. Sell direct. 6

Kenosha. Beachel & Johnson. Men's high grade ribbed underwear. 12 sewing machines. Sell direct. (G) 4

Manitowoc. Wisconsin Knitting Mill. $25,000. E. H. Ludwig, president and treasurer. Sweaters, cardigan jackets, golf and athletic goods. Sell direct. 11 sewing machines. 22

Marinette. Marinette Knitting Mills. $30,000. Frank J. Lauerman, president; Joseph A. J. Lauerman, treasurer; G. H. Nichols, superintendent and buyer. Men's, women's and children's sweaters and knit jackets. 26

Milwaukee. Everwear Hosiery Co. $15,000. Fred M. Hanson, president; Fred Braun, treasurer; Jos. H. Zens, superintendent. Men's hose. Sell direct. (D) (S) .....

NOVA SCOTIA.

Amherst. Hewson Woolen Mills. Knit goods, men and women, added. 20 sewing machines. W. A. Ingalls, superintendent knitting dept. 20

CANADA.

Ontario, Woodstock. Oxford Knitting Co., Ltd., The. $50,000. Geo. Robinson, president; W. Barrowclough, treasurer; Kenneth Harvey, superintendent and buyer. Ladies' and children's Swiss ribbed knit underwear. 10 sewing machines. Sell direct. (E) 10

NEW SILK MILLS.

CONNECTICUT.

Middletown. Merchants' Silk Co., The. $200,000. C. H. Emig, president; F. L. Lichtenstein, treasurer and superintendent. Black silks, taffetas, peau de soies, satins, plain dress silks, tie silks and linings. Sell direct. (S) 100

MASSACHUSETTS.

Northampton. The Northampton Silk Co. $15,000. Alfred T. Bliss, president; Geo. Bliss McCallum, treasurer. Throwing. Sell direct. (S) .....

Taunton. Taunton River Mills. $300,000. D. G. Dery, president and treasurer; P. H. Fenton, superintendent. Cotton and silk and all silk goods. Sell direct. (S) 600

NEW JERSEY.

Burlington. Burlington Silk Weaving Co. McDonnell, Stout & Co., 1011 Filbert St., proprietors. Broad silks. John Norris, superintendent. 85

New Durham. Pels, Frank F. & Co. Silk, mercerized and novelty yarns, sewing thread, etc. (N. Y. office, 529 Broadway.) .....

Paterson. Guthrie Silk Manufacturing Co. $25,000. William Guthrie, president; James Christian, treasurer. Fancy silk dress goods and tie silks. (E) 40

Paterson. Hengeveld-Bohl Silk Co. $25,000. Jacobus Hengeveld, president and superintendent; Wm. A. Bohl, treasurer; Geo. Clair, agent. Commission throwsters. 5,140 spindles. (S) .....

Paterson. Herbert Silk Co. Dale Mill. E. H. Hergesheimer, superintendent. Plain and fancy broad silk dress goods. 50

Paterson. Rey, Louis A. Commission silk throwing. 4,512 spindles. (E) .....

Paterson. Rogers, William. Barnert Mill. Commission throwing. 3,200 spinning spindles. .....

Paterson. Star Silk Mill. M. Joelson, proprietor. (Harding Mill). Broad silks. Sell direct. 36

Weehawken. The Bodenmann Mfg. Co. $100,000. E. A. Bodenmann, president and buyer. Embroideries and laces. .....

West Hoboken. Haas & Ufert, 526 Spring St. Fine embroidered flannels. Sell direct. (S) .....

West Hoboken. Sutter Bros., 381 Summit Ave. Swiss embroideries, laces and novelties. Sell direct. (S) .....

NEW YORK.

Brooklyn. Bay View Ribbon Co., 46th St. and 2d Ave. $100,000. Carl A. Jacobs, president; E. Louis Jacobs, secretary; Wm. Strittmater, superintendent. Ribbons. W. Emmerich & Co., N. Y., s. agts. 26

Gloversville. William Lefi & Co., 94 Marshall Ave. Installed machinery for weaving silk cloth used for silk gloves. .....

New Berlin. New Berlin Silk Mfg. Co. $25,000. E. E. Elwood, president and manager; F. T. Arnold, treasurer. Broad silks. Sell direct. (S) (New 2 story building erected) 50

Sloatsburg. Atlantic Fibre Co. Imitation silk threads. .....

PENNSYLVANIA.

Allentown. Astron Silk Company. C. M. Iaron, president; C. H. Moyer, treasurer. Piece dyed and surface printed silks. .....

Allentown. Klotz & Bregenzer. R. F. D. No. 1. Black taffeta ribbons only. H. L. Meyer & Welwood, New York, s. agts. E. Bregenzer, buyer. (W) .....

Bally. Orino Silk Mills. Geo. W. Melcher, proprietor; James Stein, superintendent. Silk ribbons. Sell direct. Geo. W. Melcher, buyer. (S) 8

Easton. Haytock Silk Throwing Co. $50,000. Wm. R. Haytock, president; C. Cronemeyer, treasurer; Dr. Benj. Haytock, Jr., superintendent. Silk throwing. 12,500 spindles. Benjamin and Wm. R. Haytock, buyers. (S) (Practically a part of the Easton Silk Co., under different management.) .....

East Plymouth. Luzerne Silk Throwing Co. $300,000. Ellis R. Simpson, president; Fred W. Bleckley, treasurer; A. H. Bleckley, superintendent. Silk throwing. 15,000 spindles. (E) .....

Lehighton. Carbon Silk Mill Co. $30,000. D. A. Rehig, president; O. F. Acker, treasurer; Geo. McKowne, superintendent. Silk throwing. 8,000 spindles. .....

Oldforge. Oldforge Silk Co. $50,000. Fowler Curl, president and superintendent; W. H. Hollister, treasurer; Wm. H. Ashley, agent and secretary. Thrown silk. (S) .....

Philadelphia. American Embroidery Co. $10,000. Edward W. Koch, president; William J. Geggis, secretary and treasurer. Embroidering hosiery and other textile fabrics. .....

Philadelphia. Bachman Braid Mfg. Co. $25,000. Erastus Jones, president; E. A. Bachman, treasurer and superintendent. Silk, worsted and cotton braids. 18 braiders. Sell direct. (S) .....

Philadelphia. Jermyn, W. & Sons. Bonnet wire. 3 winders. Buy 14s single and 2/40 mercerized and cotton and silk yarns. .....

Philadelphia. Philadelphia Embroidery Mills. F. Muhling and Philip Schumann, proprietors, 3626 North Lawrence St. Silk and mercerized cotton embroideries. Sell direct. .....

Reading. Smith, John C., 222 Pearl St. Embroidering on men's and women's hose for the trade. .....

Scranton. Butler, R. V. Silk throwing. .....

Scranton. Globe Silk Mfg. Co. $50,000. H. J. Ziegler, president; Louis Schumacher, treasurer. Silk goods, 36 in. wide. Boessneck, Broessel & Co., N. Y., s. agts. (E) 80

Siegfried. Central Silk Mfg. Co., Ltd. W. Willoughby, president and treasurer; J. H. Frederick, superintendent. Broad silks. Sell direct. Firm buyers. (S) 30

Weatherly. Onoko Mfg. Co. $50,000. Elmer Warner, president; R. E. Sendel, treasurer; John Kidd, superintendent and buyer. Dress silks. Schefer, Schram & Vogel, dept. Wendt Bros., s. agts. (S) 44

Wyoming. Wyoming Silk Mfg. Co. Wm. Kelley, president; James Eagen, treasurer. 50

RHODE ISLAND.

River Point. Pawtuxet Valley Textile Co. $50,000. Geo. F. Wright, president and buyer; Percy Wright, treasurer. Lining satins. Sell direct. .. 50

CANADA.

Toronto. Canada Cord & Tassel Co. H. Douglass, manager; A. W. Bannister, superintendent. Fringes, cords, tassels, etc. Sell direct. (Buys cotton, wool and silk yarns.) .....

MISCELLANEOUS NEW MILLS.

CALIFORNIA.

Marysville. Marysville Wool Scouring Co. $100,000. N. B. K. Brooks, president; John H. O'Brien (Boston), treasurer; Austin W. Follett, secretary. Wool scouring and carbonizing.

Stockton. Western Fibre Company. $150,000. Geo. W. Patterson, president; Fred M. West, treasurer; Daniel Burns, superintendent. Sell direct.

IOWA.

Decorah. Western Textile Co. $15,000. E. G. Boynton, president. E. W. Hoyt, treasurer; R. Freisceke, superintendent. Long and short line fibre.

Sioux City. Moreley Twine & Machinery Co. $200,000. W. Moreley, president; Harry Moreley, treasurer. Binder twine and rope. 120 spindles. Sell direct. (S) (Under construction, expect to start plant about March, '07.)

MASSACHUSETTS.

Boston. New Process Dyeing Co., 537 Albany St. $21,000. Murrah M. Kent, president; William E. Gale, treasurer. Dyeing carpets and upholstery goods.

MINNESOTA.

St. Paul. International Flax Twine Co. $250,000. Cyrus H. McCormick, president; R. F. Howe (Chicago), secretary and treasurer; F. J. Ottis, agent. Flax binder twine. 1,280 spindles. International Harvester Co., s. agts.

NEW JERSEY.

Bridgeton. Martin Dyeing & Finishing Co. $150,000. Wm. L. Martin, president and superintendent; James G. Shaw, treasurer. Fast black cotton piece goods and mercerizing and dyeing in fast black. Capacity, 15,000 lbs. daily. Myrick & Rice, 320 Broadway, New York, agent.

Camden. W. J. Weaver, 25 George St. Cotton and woolen waste.

Fairview. Bellman Brook Bleachery Co. $300,000. Benj. I. Ward, president and buyer; Geo. Van Keuren, treasurer; Daniel Gee, superintendent. Bleaching and finishing cotton goods. (E & W) (Capacity, 10,000 pieces per week.)

Linden. Desaye, M. & Co. $150,000. Ch. Ablitzer, president; J. Perret, treasurer; Henry E. Perret, agent; A. Desaye, superinntendent. Dyeing, bleaching, cleaning and finishing, also refinishing new goods.

Passaic. Bradford Dye Works. Specialty, cotton backs, all silks.

Passaic. Raw Dye Works. E. Raw, proprietor. Dyeing velvets and silks on silk mixtures in the piece; rainbow effects.

NEW YORK.

Cohoes. Hudson River Bleachery. John F. Quinn, proprietor. (Office Pearl Knitting Mills.) Bleaching yarns and cloth.

Patchogue. American Fibre Matting Co. I. D. Einstein, president; M. Helmensdorfer, secretary and treasurer. Fibre matting, art squares, etc. H. B. Bradley, N. Y., s. agt.

Utica. Erie Dyeing Company, 126 Erie St. J. Shuttleworth, president; F. Shuttleworth, vice-president; C. J. Broadbent, secretary and treasurer. Dyers and bleachers knit goods, raw stock and yarns.

NORTH CAROLINA.

Lattimore. Pink Mfg. Co. $20,000. W. B. Gettys, president; J. P. Dellinger, treasurer; B. C. Dellinger, agent. Jute bagging. 50 spindles; 2 looms. (S)

Wilmington. Willard Bag & Mfg. Co. Rebuilt plant destroyed by fire. New building, 200 by 50 feet, 3 stories.

OHIO.

Cleveland. Philadelphia Yarn Dyeing & Bleaching Co., E. August, proprietor, 4204 Hamilton Ave. Dye cotton and worsted yarns, roving and slubbing.

OREGON.

Portland. Ross Wool Scouring Co. Thomas Ross, president and manager. Scouring wool. (Mill at Sellwood.)

PENNSYLVANIA.

Bristol. American Turkey Red Dye Works. Arnold Keller, manager. Dyeing colors on cotton yarns.

Philadelphia. Callaghan & Hey, 1729 Gillingham St., Frankford. Beaming plain and fancy warps.

Philadelphia. Eureka Textile Printing Co., 137 No. 12th St. Joseph Brucher, president; Fred E. Schmidt, treasurer; Bethel Ware, secretary. Printing cotton, silks, plushes, felts, etc.

Philadelphia. Germantown Bleach Works, 82 Armat St., Germantown. Bleaching hosiery. Capacity, 5,000 lbs. per day.

Philadelphia. Hughes, John H., Co., 2320 N. 8th St. New building erected at 4th St. and Erie Ave. To remove to same and will install machinery for coning, spooling, winding, etc.

Philadelphia. Leather, George, 1545 Ruan St. Woven railway waste.

Philadelphia. Simoneau, A. B. & Son, 214-216 W. Dauphin St. Beaming plain and fancy warps.

Philadelphia. Wayne Dyeing & Finishing Co. (Wayne Junction.) Dye and finish hosiery. Capacity, 400 dozen per day.

RHODE ISLAND.

Drownville. Frost Finishing Company. $60,000. Geo. B. Frost, president and buyer; Edwin Langdon, treasurer. Bleaching, dyeing and finishing cotton and other fabrics. (Addition for making imitation leather.)

East Greenwich. A. H. Esten (formerly at Washington, R. I.) New plant started here. Dyeing and spooling yarns. (S)

Woonsocket. Rosemont Dyeing Co. $20,000. John G. Masson, president and superintendent; Aram J. Pothier, treasurer. Scouring, bleaching, dyeing, etc. (S)

Woonsocket. Woonsocket Scouring & Carbonizing Co. James Gilet, manager. Custom sorting, scouring and carbonizing.

SOUTH CAROLINA.

Rock Hill. Enterprise Mfg. Co. $25,000. T. L. Johnston, president; J. B. Creighton, treasurer and buyer. Jute bagging. 2 looms. Sell direct. (S)

TEXAS.

Dallas. Dallas Machinery Waste Mfg. Co. M. H. Thomas, proprietor; D. Wooten, superintendent. Cotton and wool wiping and packing waste.

WYOMING.

Laramie. Wyoming University Experiment Station. G. E. Morton, superintendent and buyer. Small scouring mill.

Projected Industries

Under this head are enumerated such projects as are now in course of construction, or which in all probability soon will be, but are not sufficiently far advanced to be properly identified in the list of new mills.

COTTON.

ARKANSAS.

Vanburen. E. B. Miller interested in cotton mill proposed with capital stock $300,000.

GEORGIA.

Camilla. Ernest Davis. Interested in cotton mill projected at this place.

Columbus. Swift Spinning Mills. $125,000. E. W. Swift, J. P. Kyle interested. 10,000 spindles.

MASSACHUSETTS.

Fall River. Lincoln Mfg. Co. $600,000. Leontine Lincoln, president; Benj. B. Read, Jr., treasurer. Fine goods. 50,000 spindles; 1,000 looms. (Work not yet started, Nov., 1906.)

New Bedford. Quansett Spinning Co. $600,000. Wm. C. Hawes, president; Frederic H. Taber, treasurer. (Expect to start June, '07.)

NEW YORK.

Amsterdam. Little Falls Fiber Co. Cotton batting.

NORTH CAROLINA.

Concord. Cannon Mfg. Co. To erect two mills. 50,000 spindles; 1,300 looms. Manufacture yarns and sheeting. New town to be formed as Kanapolis.
Gastonia. Holland Mfg. Co. $50,000. G. A. Gray, president; D. M. Holland, secretary and treasurer. coarse yarns. 2,000 spindles. (E.)
Mooresville. Dixie Cotton Mills. $100,000. 5,000 spindles; electricity. (Expect to start work in early spring.)
Rosemary. Transylvania Co. $50,000. E. E. Bowen (Greensboro), president; L. S. Carmen (Roanoke Rapids), secretary. Fancy shirtings and towels.
Statesville. Monbo Mfg. Co. Purchased valuable site on Catawba River; proposes improving in 1907.
Willardsville. Little River Mfg. Co. $100,000. R. H. Wright, president; J. D. Mason, vice-president; A. G. Cox, secretary and treasurer; M. D. Harris, superintendent. High grade yarns. 2,500 spindles.

RHODE ISLAND.

Enfield. Enfield Mills. Reported to be started up by H. C. Whitman of New York. New building to be erected; total of 50,000 spindles.

SOUTH CAROLINA.

Woodruff. W. S. Gray; interested in company to start about January on new plant.

TENNESSEE.

Chattanooga. Wachovia Cotton Mills, The. $1,500,000. 100,000 spindles; 3,500 looms. W. I. Young, president and general manager.
Del Rio. Del Rio Cotton Mills. John N. Adams interested. $200,000 plant proposed.

WOOLEN.

IDAHO.

Pocatello. J. F. Lever, Eureka, Cal. Woolen mill at this place proposed in the spring.

MAINE.

Houlton. Woolen mill proposed. Commercial Club interested.

MINNESOTA.

St. Paul. St. Paul Woolen Mill Co. Proposed.

WISCONSIN.

Luxemburg. Luxemburg Woolen Mill Co.

KNIT.

GEORGIA.

Moreland. Moreland Mfg. Co. Considering project of erecting a knitting mill.

MAINE.

North Brooksville. Limebruner, Grace M. Hosiery, mittens, sweaters, etc. Proposed.

MINNESOTA.

Brainerd. The General Mercantile & Investment Co. Knitting Mill. Proposed.

MISSOURI.

St. Louis. Harrison Matson, 120 No. 2d St. Knitting mill proposed.

MONTANA.

Helena. Montana Knitting Mills. Considering putting up a mill for making wool yarn.

NEW YORK.

Port Henry. Geo. B. Strouse (Box 33). Interested in hosiery mill.

PENNSYLVANIA.

Philadelphia. Pulster, Henry (1671 Wakelin St., Frankford). Infants' and misses' hosiery.
Philadelphia. Sutphen Knitting Co., Chris J. $25,000. Dr. Jermon (3022 Ridge Ave.), Chris J. Sutphen (3131 F St.), interested.
Tower City. Emery B. Miller. Knitting mill under contemplation.

SOUTH CAROLINA.

Camden. Moseley, W. F. Reported interested in organizing company with $25,000 capital; plant capacity 250 dozen hosiery daily.

SILK.

CALIFORNIA.

San Diego. Fascher, Herman. New company to be organized when patents are issued.

NORTH CAROLINA.

Kinston. Kinston Spinning Co. William H. Ashley (Hackettstown, N. J.) interested.

PENNSYLVANIA.

Allentown. Kaltenbach & Stephens (Brooklyn). Large silk mill, branch, to be established here.
Fayetteville. Fayette Silk Co. $15,000. Milton R. Long, superintendent.

MISCELLANEOUS.

MASSACHUSETTS.

Gardner. Oxford Fibre Co. $600,000. E. C. Mudge, treasurer. Manufacture linen products from waste and tow fibre.
Millbury. Daniel Macduff. Proposes starting a separate shoe thread mill.

MISSOURI.

Kansas City. The United States Ramie Fibre & Mfg. Co. $100,000, J. Walter Farrar, president; Lemuel A. Murphy, treasurer; John H. Marshall, buyer. To operate a degumming plant. Propose establishing a mill later.

NORTH CAROLINA.

Milford. Middlesex Linen Co. J. W. Powell (Lowell) interested. Towelings and similar goods.

Important Changes.

COTTON.

ALABAMA.

Birmingham. Birmingham Cotton Mills. Adler Bros. Cotton yarns. (Purchased plant from Southern Textile Co.)
Huntsville. Abingdon Mills. $150,000. J. L. Hand, president; T. W. Pratt, treasurer and agent; C. F. Massey, superintendent and buyer. Duck, 8 to 11 oz.; 18,328 ring spindles; 500 looms. Wm. L. Barrell Co., New York, s. agts. (S.) (Formerly the Madison Mfg. Co.'s plant; added 3,328 new spindles.)
Sylacauga. Mathews, T. J. Disposed of knitting machinery and equipped mill for manufacturing white hosiery yarns. 5,000 spindles.

CONNECTICUT.

Hawleyville. The Allison Co. Organized to continue business of the New England Lace Co.
Meriden. New England Braid Mfg. Co. $10,000. H. Adlman, president, superintendent, and buyer; M. Cherniack, treasurer. Soutache and diamond braids. 300 machines.

GEORGIA.

Atlanta. Bellevue Mills Company (1018 Century Bldg.). Wm. H. Harriss, president and general manager; Col. P. H. Corr (Taunton, Mass.), vice-president; T. Ashby Blythe (114 Chestnut St., Phila.), secretary and treasurer. Textile Commission Co., 73 Worth St., New York, s. agts. Operate mills at Moorhead, Miss., Burlington, N. C., and Rock Hill, S. C.
Augusta. Nixon Mfg. Co. G. H. Nixon, president; A. K. Clark, manager. Sheeting, shirtings, osnaburgs. 4,600 spindles; 195 looms. (W)
Chattahooche. Whittier Mills, The. $500,000. Paul Butler (Lowell, Mass.), president; W. R. B. Whittier, treasurer. Take over Whittier Mills.
Habersham. Habersham Mills. $100,000. S. Y. Stribbling, president and treasurer; H. I. Weaver, secretary; Aubrey Motz, superintendent and buyer. 30/2 skeins and warps. 7,259 spindles. (W.) (Formerly Porter Mfg. Co., Bert.)
Woodstock. Little River Mills. J. S. Dorn. Rope. Operates mill formerly run by E. A. Fincher. Installed 1,000 new spindles.

MASSACHUSETTS.

Unionville. Franklin Mills Corporation. $10,000. Formerly the Worcester Textile Co. Berry Laycock, superintendent. Manufacture towels and towelling. Sell through Converse, Stanton & Co.

MISSISSIPPI.

Moorhead. Bellevue Mills Co. Mill No. 3. L. I. Allen, resident manager. Sheetings, drills, ducks, etc. 5,000 spindles; 150 looms; steam. (Formerly Moorhead Cotton Mill.) Main office company at Atlanta, Ga.

NEW YORK.

Newburgh. Newburgh Steam Mills. $100,000. Wm. E. Thorn, president; Oscar Hussa, treasurer; Fred Knott, agent and superintendent. (Company organized to operate above mills; closed for some time.)

NORTH CAROLINA.

Burlington. Bellevue Mills Company. Mill No. 1. J. M. Browning, resident manager. Domets or cotton flannels. 3,120 spindles and 150 looms. Dye and finish. (Formerly the Windsor Mill.) Main office of company at Atlanta, Ga.

Cooleemee. Cooleemee Cotton Mills. Purchased by the Erwin Cotton Mills Co. (West Durham) and operated as their No. 3 mill.

PENNSYLVANIA.

Chester. J. E. Frick & Co. Jefferson Mills. Rope and Twines. Purchased plant formerly known as the Standard Spinning Co.

RHODE ISLAND.

Arcadia. Gordon & Tillinghast. Now operate the Roger Williams Cotton Mills. Make cotton yarns, Nos. 15 to 40; 4,032 mules and 4,000 ring spindles.

Pawtucket. Solway Dyeing & Textile Co. A. F. Steine, president; Wm. Halliwell, vice-president and agent; Robert Dow, treasurer. Fancy cotton and silk piece goods and dyeing (commission). 500 looms; sell direct. (D) (S) (Consolidation Ingrahamville Dye Works, Pawtucket, and Solway Mills, Westerly, R. I.)

SOUTH CAROLINA.

Rock Hill. Bellevue Mills Company, Mill No. 2. David Clark, resident manager. Sheeting, drills, etc. 8,500 spindles; 200 looms; dye; electric power. (Formerly Chicora Mill.) Main office of company at Atlanta, Ga.

TENNESSEE.

Trenton. Trenton Cotton Mills. Changing from cloth mill to yarn plant, single and ply yarns.

TEXAS.

Denison. Denison Cotton Mill Co. (Successors to American Spinning Co.) Added 5,000 new spindles.

VERMONT.

Burlington. Chace Mills (Fall River). Purchased and operate the Burlington Mills on print cloth.

WOOLEN.

CALIFORNIA.

Marysville. Marysville Woolen Mills. Leased by Stockton Woolen Mills.

CONNECTICUT.

East Glastonbury. Angus Park Mfg. Co. $50,000. Frank P. Simonds, president; Henry Simonds, secretary; Angus Park, treasurer and general manager. Purchased Crosby Mfg. Co.'s plant.

West Willington. Willington Woolen Mills. Organized to continue operating the mills at this place. Simon Sionsky, president; S. S. Welch, agent and superintendent. Kerseys and cheviots.

DELAWARE.

New Castle. Cromwell Woolen Mills. M. Gambrill, proprietor. J. H. Lord, superintendent. Men's suitings, all wool, also cotton warp goods; 8 sets; 150 narrow looms; 3 pickers; 4,264 woolen spindles. Wm. Burgess & Co., New York, s. agts. (formerly Fort Casimir Woolen Mills.)

MAINE.

Waterville. Terry Mfg. Co., The. $100,000. Robert A. Latimer, president; G. F. Terry, treasurer. Woolens. (Operate plant formerly known as the Riverview Worsted Mill.)

MARYLAND.

Baltimore. Calvert Cloth Co. Ladies' cloakings. (Operate plant formerly known as Maryland Woolen Co.)

MASSACHUSETTS.

Clinton. Victor Mfg. Co. $100,000. Victor P. Thewlis, president, agent and buyer; Wm. G. Wright, treasurer; Lloyd L. Sykes, superintendent. Fine woolen and worsted fabrics. Henry W. T. Mali & Co., N. Y., s. agts. (S.) (D.) (Operate mill formerly known as Nashua Valley Mills.)

Concord. Strathmore Worsted Mills. $150,000. A. Aidie, president; J. D. Coit, treasurer. (Formerly the Concord Mills.)

Hudson. J. J. Hennessey. Purchased plant of the Hudson Blanket Co. and operates same on bed blankets.

Middleboro. Nemasket Woolen Mills Co. $75,000. Crawford M. Barnes, president; Geo. B. Sanford, treasurer. Fancy worsteds. Stevens, Sanford & Handy, s. agts. (Formerly the Middleboro Worsted Mills.)

North Adams. Davies & Mahoney Spinning Co. Equipped Broadley Mill with 6 sets cards. Make yarns, 1 to 6 run. Sell direct. (Formerly at Pittsfield.)

North Oxford. Thayer Woolen Co. Purchased Huguenot Mills, repaired and operated as a branch plant.

Otter River. Hamlet Mills, Oakdale, Mass. Purchased Templeton Mills at Otter River and removed plant to latter place. Increased facilities.

Spencer. Allendale Woolen Co. $25,000. Allen L. Taft, president; W. H. Gerrish, superintendent. (Continue plant of Spencer Woolen Mfg. Co.) Replaced 48 narrow looms with 24 broad ones.

Wilkinsonville. Buttonwood Shoddy Mill. Sold to Peter Lynch, Woonsocket, R. I.

MINNESOTA.

New Ulm. New Ulm Woolen Mill Co. New company organized to operate mill at this place. Will erect a new 2 set mill.

NEW JERSEY.

Braddock. The Bailey & Steel Mfg. Co. Remodelled plant for manufacturing cheviots and men's wear. Use 2/40, 2/32 and 1/36 worsteds.

NEW YORK.

East Salem. Eagleville Woolen Mill. $10,000. R. C. Ashworth, president; G. W. Curtis, treasurer. Horse clothing and blanket sheetings. N. Y. office 88 West Broadway. (Successors to J. E. Ashworth & Sons.)

OREGON.

Eugene. Eugene Woolen Mill Co. $40,000. T. B. Kay, president; T. L. Chambers, treasurer; E. Koppe, superintendent. Blankets, flannels and robes. 3 sets; 24 looms. Sell direct. (Formerly the Willamette Valley Woolen Mill.)

Pendleton. J. Sheuerman & Son. Operate the Pendleton Woolen Mills; making Indian robes and blankets, shawls and couch covers.

PENNSYLVANIA.

Glen Riddle. Daniel Lee's Estate. Removed plant from Lenni Mills to this place. Increased to 40 looms.

Philadelphia. Beswick & Clay. Fairmount Spinning Mills. (Formerly Thomas W. Clay.)

Philadelphia. The J. Wesley Johnson & Colton Carpet Yarn Spinning Co. $16,000. J. Wesley Johnson, president and treasurer; H. C. Roberts, secretary. Removed to Howard and Berks Sts. (Formerly business J. Wesley Johnson.)

RHODE ISLAND.

Allenton. Belleville Woolen Mills. Purchased by J. C. Fletcher. Start up about Jan. 1st.

Ashaway. Nashua Valley Mills. Wm. Rodger, president, manager and buyer; Chas. G. Bancroft (7 Congress St., Boston), treasurer. Worsted fabrics. 24 looms; water and steam; dye. W. Stursberg, Schell & Co., N. Y., s. agts. (Formerly Progress Worsted Mills.)

Oakland. Francis Woolen Mill. $30,000. A. Beach, president; Gilbert F. Whipple, treasurer, agent and superintendent. Woolen yarns. (Operate Gilbert F. Whipple's Mill.)

Providence. Paramount Worsted Co. Taken over Star Worsted Co.'s plant.

SOUTH CAROLINA.

Greenville. McGee Mfg. Co. Addition 100 by 60 feet to main mill. Also added new dye house. Installed 44 looms for making blankets.

TENNESSEE.

Rotherwood. Unaka Corporation. Purchased Rotherwood Mills.

WISCONSIN.

La Crosse. Onalaska Woolen Mfg. Co. Removed knitting plant to this place from Onalaska. New buildings erected. Expect to move balance of plant in another season and add another set of machinery.

KNIT.

ALABAMA.

Gadsden. Gadsden Mfg. Co. $15,000. C. H. Moody, president; C. B. Foreman, treasurer. H. H. B. Booth, superintendent and buyer. (Succeeds Adams Knitting Mill.)

IDAHO.

Preston. Preston Knitting Works. A. B. C. Jenson, proprietor. Knit goods; men's, ladies' and children's union suits and hosiery. 6 Lamb and 4 finishing machines. (Formerly Oneida Knitting Works.)

GEORGIA.

LaFayette. Walker County Hosiery Mills. $45,000. J. P. Shattuck, president; P. D. Fortune, treasurer; W. L. Magill, agent and buyer; S. C. Rogers, superintendent. Ladies' fine hose. 120 knitting machines. Sell direct. (S.) (D.) (Formerly the Elizabeth Hosiery Mill.)

MASSACHUSETTS.

Brockton. Harding Knitting Co. Hardey Harding, president; W. T. Stall, treasurer; C. H. Dean, secretary. Purchased plant of Harding Knitting Mill, Waltham, and established here.

MICHIGAN.

Detroit. S. Shlesinger Knit Goods Co. (Cleveland, Ohio.) Purchased and will operate the plant of the Wolverine Knitting Co. at Cleveland.

Detroit. Hugh Wallace Company. Incorporated with capital stock $400,000. Operate plant formerly known as the Western Robe Co.

NEW JERSEY.

Burlington. Pearl Knitting Mills. Thos. P. Eltonhead, general manager. Ladies' underwear and children's wraps and hosiery. 15 knitting machines; 40 sewing machines. Rusch & Co., s. agts. (S.) (Formerly Burlington Knitting Co.'s mill.)

NEW YORK.

New York. Reliable Fashion Knitting Mills. J. Herzberg and A. Selner, proprietors. Succeed Acme Knitting Mills, 373 Canal Street.

Philmont. Columbia Mesh Knitting Co. $30,000. P. Hoctor, president and treasurer; J. F. Gangloff, superintendent. Men's mesh knit underwear in summer weights. 12 knitting machines; 30 sewing machines. Sell direct. (S.) (Formerly McNamee Mesh Knitting Co.)

Rondout. Hudson Valley Mills (Kingston, N. Y.) (Formerly Cornell Knitting Co.) Erecting large mill at Fort Worth, Texas, will remove plant. Make children's cotton ribbed underwear.

Stittville. Stittville Knitting Mill. Geo. A. Frisbie and Chas. S. Symonds. Output increased. (Formerly Hackett & Atwood.)

Waterville. Oneida Hosiery Co. Removed finishing plant, Oneida, to branch mill at this place, owing to better conditions. Established headquarters here.

NORTH CAROLINA.

Burlington. Burlington Hosiery Mill Co. $100,000. G. W. Fogleman, president and treasurer; R. H. Whitehead, superintendent. (Formerly the Burlington Hosiery Mills.) Addition built to plant and 40 new knitting machines installed, also installed dyeing and finishing plant.

Fayetteville. Algodon Knitting Mills Co. $50,000. Frank H. Cotton, president and buyer; Jno. C. Gorham, treasurer. Installed 20 new knitting machines. Hosiery. Sell direct. (Continue plant started by F. H. Cotton.)

PENNSYLVANIA.

Bally. Urner, W. C. & Co. Purchased Wallace Stengel's mill. Operate as branch plant. 16 knitting machines.

Ephrata. Ephrata Hosiery Mill Co. Incorporated $20,000 to continue the Ephrata Hosiery Mill. F. S. Weaver, president and treasurer. Installed 40 new knitting machines.

Mechanicsburg. Jos Black & Sons Co. (York.) Purchased Windsor Knitting Mills; operate as branch mill.

Mechanicsburg. Blue Ridge Knitting Co. (Hagerstown, Md.) Purchased plant of the Black Rock Knitting Co. and operate same as branch mill.

Nazareth. Kraemer Hosiery Co. (A. G. & F. H. Schmidt.) Purchased plant formerly run by H. Kraemer.

Nazareth. Nazareth Knitting Mills. Succeed to business of Fred Wunderly. Adding new machinery and dye plant.

Philadelphia. Defiance Knitting Mills. $15,000. Jacob Rositsky, president; D. Joffe, secretary and treasurer; Edwin Boardman, superintendent. Ladies' and children's ribbed underwear. 30 knitting and 30 sewing machines. Sell direct. (Succeed Standard Knitting Mills.)

Philadelphia. Rockingham Mills. (Formerly Lowd Mfg. Co.) To remove to 8th and Dauphin Sts. (Office 517-21 Bourse Bldg.)

Port Carbon. Superior Knitting Co. Incorporation H. L. Miller's plant. Added new machniery.

Reading. Berkshire Knitting Mills. (Successors to Hosiery Dept. Textile Mach. Works.) $60,000. Gustav Oberlaender, treasurer; E. O. Spindler, s. agt.

Reading. S. S. Miller. Erected new mill, 150 by 36 feet, three stories and basement. Purchased hosiery business of Miller & Balthaser, West Leesport, and removed to this plant.

Reading. Reading Hosiery Co. Incorporated capital stock, $250,000. Chas. E. Reiss, president; H. C. Geissler, treasurer; A. E. Vaughn, superintendent. Absorbed Endurance Knitting, Pottstown Hosiery, Park Hosiery Mills at Pottstown and Chas. Templeton's plant at Norristown. Consolidated machinery. Operate one knitting plant at Pottstown and large dye house and a large mill at Reading. Main office of plant at Reading.

SOUTH CAROLINA.

Newberry. Ashley Mfg. Co. $30,000. J. A. Blackwelder, president and manager; J. W. Davenport, treasurer. Seamless cotton hosiery. (Formerly Newberry Knitting Mill.)

VIRGINIA.

Portsmouth. Tidewater Knitting Mills. (William Sloane & Co., Berkley. Men's and boys' fleece lined underwear. (Formerly Portsmouth Knitting Mills.)

Roanoke. Roanoke Knitting Mills, Inc. $25,000. E. W. Tinsley, president; E. F. O'Brien, treasurer and agent. (Purchased plant formerly run by D. Robb & C. Michael.)

CONNECTICUT.

Canaan. Reliable Mfg. Co., The. $10,000. Walter J. Roberts, president and superintendent; Samuel A. Eddy, treasurer. Men's half hose. 20 machines. (D.) Sell direct. (New building erected here and plant removed from Hartford.)

SILK.

MASSACHUSETTS.

New Bedford. Barbour Silk Mfg. Co. Johnson Barbour, proprietor. Broad and dress silks. Removed plant here from Meadville, Pa., where it was operated as the Meadville Silk Co.

NEW JERSEY.

Paterson. The Maynard Company. $500,000. H. J. Maynard, president; Bernard MacMackin, treasurer; N. S. Howard, superintendent. Silk ribbons and hat bands. Sell direct. (Succeeds Meding Mfg. Co.)

Union Hill. Clifton Silk Mills. Purchased by Rogers & Thompson and continued in operation by new management.

NEW YORK.

Amsterdam. Kayser, Julius & Co. Purchased Amsterdam Silk Mills.

Fonda. Empire Fabric Co. $7,500. Incorporated to continue plant of the Dexter Silk Mills. Joseph Bachner, president; August Klein, treasurer. Silk, cotton and mercerized goods. 120 spindles; 11 looms. Bellis & Klein, Gloversville, N. Y., s. agts.

Fultonville. L. M. Blumstein Silk Fabric Co. Or-

ganized to operate the Starin Silk Fabric Co.'s plant. Plant is equipped with 125 sewing machines; 13 looms; on silk fabric gloves.
North Tonawanda. Niagara Silk Mills. Formerly the Gloversville Textile Co., Gloversville, N. Y.

MISCELLANEOUS.

MASSACHUSETTS.

Medford. Crown Dyeing Company. $100,000. Successors to Mystic Print & Dye Works.

NEW JERSEY.

Paterson. Bohl Silk Dyeing Co. Erected new dye house. May change name to Dundee Lake Dye Co. Silk dyeing. Expect to have completed Jan., '07.

NEW YORK.

North Tonawanda. Niagara Cordage Co. Removed plant from Buffalo, to new building erected here.

PENNSYLVANIA.

Philadelphia. Brandenburger & Co., 1114 N. Front So. (Successors to John Iliffe.) Dye skein silks, bleach tussah, etc.
Schuylkill Haven. Samuel Rowland. Purchased plant of the Columbia Bleaching & Dye Works, and operates in connection with the Schuylkill Haven Bleach & Dye Works.

VIRGINIA.

Petersburg. Werres & Hinton Silk & Dye Works. H. P. Stratton, president; John H. Werres, vice-president and general manager; F. H. Heineman, secretary and treasurer. (Incorporation formerly Werres & Hinton.)

CANADA.

Toronto. Smart Bag Co., Ltd. $1,000,000. Chas. A. Smart, president and managing director; John T. F. Keene, treasurer. Jute and cotton bags, plain and colored burlaps, buckrams, canvas, rope and twines. Operate mills at Toronto and Winnipeg, formerly run by John Dick.

Enlargements and Improvements

This list is not, by any means, a complete record of Enlargements and Improvements, but there is hardly a mill in the country that has not made some changes and improvements. The object is as far as possible to enumerate the more important and such as have a bearing on the growth of the industry.

COTTON.

ALABAMA.

Anniston. American Net & Twine Co. (Linen Thread Co.) Addition being built to mill; will install 5,000 new spindles; expect to have completed May, '07.
Anniston. Anniston Yarn Mills. Capital stock increased. Addition to be built to mill, doubling capacity.
Eufaula. Eufaula Cotton Mills. Installed 10 new (Pettee) cards and 6 drawing frames
Florence. Cherry Cotton Mills. Installed new power plant; 4 new boilers, 169 h. p.
Girard. Girard Cotton Mills. Addition 100 x 24 feet, to weaving department; installed 48 new looms; also carding and spinning machinery.
Jacksonville. Ide Cotton Mills. Added 5,000 more spindles, making total of 11,000.
Lanett. Lang Mfg. Co. Addition; new picker room and weave shed; new machinery installed.
Livingston. Livingston Mfg. Co. Capital increased to 100,000. Additional machinery installed.
Opelika. Opelika Cotton Mills. Installed 2464 new spindles.

CONNECTICUT.

Danielson. Danielson Cotton Co. New weave shed erected 108 x 60 feet; installed 100 looms; new power house built, 275 h. p. engine and new dynamo (1,200 lights) added.
Fitchville. Palmer Bros. Company. Two-story addition made to mill; installed 500 h. p. engine.
Middletown. Arrowanna Mills. I. E. Palmer, prop. Erected new building, 100 x 50 feet, three stories, brick, for finishing depaartment.
Moosup. Cranska Yarn Mills. New additions, 40 x 80 feet, 2 stories; 54 x 80 feet, 3 stories; also engine and boiler house, 40 x 30 feet, 1 story.
New Haven. Narrow Fabric Co. Erecting new mill, 100 x 120 feet, one story brick, at Allingtown.
South Willington. Gardiner Hall, Jr., & Co. Addition 90 x 60 feet, 3 stories, briek, under construction.
Uncasville. Uncasville Mfg. Co. Addition made to office building; also added 20 new looms and a 750 h. p. engine.
Willimantic. Windham Mfg. Co. Installed new water wheel, repiaced old looms with 40 new ones; also added 9 new cards.
Wauregan. Wauregan Co. Erected two 2-story additions, each 36 x 30 feet, to cloth and picker departments; also made addition to office department.

DELAWARE.

Wilmington. Delaware Cotton Co. Started up dye house.

GEORGIA.

Cedartown. Standard Cotton Mill. Installed 3,600 additional spindles.
Columbus. Eagle & Phoenix Mills. Installed 16,000 new spindles, replacing some old ones, and about 3,500 over old equipment.
Covington. Covington Cotton Mills. Addition built to mill and equipped with machinery.
Dalton. Crown Cotton Mills. Erecting new mill; equipment 12,500 spindles, 250 looms; to make flat ducks and osnaburgs. (Expect to have running July, '07.)
Gainesville. Gainesville Cotton Mills. Installed 2,000 additional spindles and 76 looms.
Lafayette. Union Cotton Mills. Increased capital stock to $200,000. Spindles increased to 18,200.
Lindale. Massachusetts Mills in Georgia. Installed 1,036 new automatic Draper looms with Roper heads.
Monroe. Walton Cotton Mill Co. Increased capital stock to $140,000. Built addition and installed 5,000 additional spindles and 160 looms; giving total of 10,000 spindles and 316 looms.
Newnan. Newnan Cotton Mills. Increased capital to $500,000. No. 2 mill under construction; 35,000 spindles. Expect to have 17,500 in operation by Feb., '07.
Pelham. Pelham Mfg. Co. Added new building, 105 by 172 feet, 2 stories. Installed 6,500 more spindles and 150 looms; also 5 filling twister and 3 warp twister frames.
Thomson. Smith, J. E., Cotton Mfg. Co. Addition built to mill. Capacity increased to 10,000 spindles and 250 looms.
Trion Factory. Trion Manufacturing Co. Replaced 11,000 spindles; also installed 287 (Draper) looms, replacing 270 plain looms. A new flyer frame and warp tying-in machines (2) also put in.

KENTUCKY.

Louisville. Louisville Cotton Mills. Installed dyeing machinery on raw stock.

MAINE.

Biddeford. Pepperell Mfg. Co. Installed 1,300 Draper looms during year.
Lewiston. Avon Mfg. Co. Equipping old Lewiston Machine Co.'s building for spinning yarns.
Saco. York Mfg. Co. No. 4 mill built, 227 by 80 feet, 4 stories. About 624 looms installed.
Westbrook. Dana Warp Mills. Addition, 30 by 50 feet, four stories, brick, built to mill. Installed 5,000 new spindles, replacing old ones and 4,000 additional ones.

MARYLAND.

Baltimore. Knox, W. & J. Net & Twine Co. New mill, 200 by 80 feet, 3 stories; 10,000 spindles installed.
Baltimore. Mt. Vernon-Woodberry Cotton Duck Co. Large opener and cloth house, 100 by 75 feet, one story, erected; also pump house, 26 by 22 feet, one story, and reservoir capacity 500,000 gallons.
Elk Mills. Baldwin Mfg. Co. Built addition, 100 by 50 feet. Equipped with 48 broad looms.

MASSACHUSETTS.

Adams. Renfrew Mfg. Co. Addition, 120 by 40 feet.
Amesbury. Hamilton Co. Replaced old looms with new ones; about 80 removed and 24 larger ones installed.
Bondsville. Boston Duck Company. Installed 36 new looms; also made additions to picker house, dye house and storage warehouse.
Chicopee. Dwight Mfg. Co. Two story weave shed erected, 330 by 250 feet Removed machinery from mills 5, 6, 7 to new building, and additional machinery installed.
Easthampton. The Nashawannuck Company. Increased capital stock to $500,000; built addition, 150 by 46 feet.
Easthampton. West Boylston Mfg. Co. A new mill, 325 by 120 feet, brick, two stories, with extension, 120 by 50 feet, one story, brick, under construction.
Fall River. Conanicut Mills. Installed 34 new looms.
Fall River. Luther Mfg. Co. New addition, 2 stories, to picker house, wing No. 1 mill; preparatory department increased.
Fall River. Sagamore Mfg. Co. One story addition, 62 by 77 feet; additional speeders installed.
Fitchburg. Grant Yarn Co. Erecting addition, 75 by 50 feet, 3 stories, brick; 6,000 new spindles to be added.
Housatonic. Monument Mills. Brick addition, 112 by 84 feet, 5 stories, erected; also new picker house, 130 by 60 feet, 4 stories; 12,000 additional spindles to be installed.
Lawrence. Everett Mills. Addition, 120 by 78 feet, five stories, built to No. 3 mill. For picking, carding and spinning purposes.
Lowell. Lowell Weaving Co. Erecting new mill, 300 by 70 feet, two stories, on Marginal Street. Will occupy same about February, with increased space. New machinery to be installed early next year.
New Bedford. Wamsutta Mills. Erecting new weave shed to install 800 looms. Also added revolving top flat cards, combing machinery and roving machinery. (Wm. Firth Co.)
New Bedford. Bristol Mfg. Co. New weave shed erected, 300 by 100 feet, 2 stories. Added 15,000 new mule spindles and 500 new looms. Original mill contained 50,000 ring spindles and 1,435 looms. May possibly take out some old looms.
New Bedford. Kilburn Mill. Addition underway, 150 feet long, 2 stories; 15,000 new spindles to be installed.
Three Rivers. Otis Company. Addition 60 feet long, 2 stories, to dye house. Also addition, 125 by 70 feet, 3 stories, brick, for cloth room at Ware.

MISSISSIPPI.

Laurel. Laurel Cotton Mills. New addition, 165 by 75 feet, 2 stories. Installed 8,320 new spindles, making total of 18,720.
Tupelo. Tupelo Cotton Mills. Purchased property formerly occupied by Topsey Hosiery Mills. Added machinery, giving total of 8,000 ring spindles and 300 looms.

NEW HAMPSHIRE.

Manchester. Stark Mills. Built addition, 30 by 33 feet, 3 stories, to bleachery.
Nashua. Nashua Mfg. Co. New building, 172 by 100 feet, 5 stories, Mill No. 7; flannels and domestics; 600 looms.
Penacook. New Hampshire Spinning Mills. Increased capital stock to $250,000. Installed additional carders and combers.

NEW YORK.

Oswego. Standard Spinning Co. Addition, 107 by 41 feet, underway; to install 5,000 spindles. Expect to be complete Feb., '07.

NORTH CAROLINA.

Asheville. Elk Mountain Cotton Mills. Erected building for bleachery.
Charlotte. Highland Park Mfg. Co. Installed 400 new looms in No. 3 mill.
China Grove. Patterson Mfg. Co. Mill No. 3. (Under construction, December.)
Concord. Cabarrus Cotton Mills. Built two story addition, 100 by 175 feet; installed 17,000 new spindles.
Concord. Concord Weave Mill. Quilts. (Jacquard machines.) (Is an addition to the Magnolia Mills and known as Concord Weave Mill.) 40 looms.
Concord. Gibson Mfg. Co. New weave shed erected, saw tooth roof; 500 looms.
Concord. Odell Mfg. Co. Installed 80 new looms.
Cumberland. Cumberland Cotton Mills. Re-equipped and enlarged the plant. Opened a branch office in Boston, Mass.
Davidson. Linden Mfg. Co. Installed 1,248 new spindles.
Durham. Golden Belt Mfg. Co. Erecting new bag factory, 130 by 60 feet, two stories; also added 2,080 new ring spindles.
Franklinville. Franklinville Mfg. Co. Installed five new spinning frames.
Franklinville. Randolph Mfg. Co. Addition to mill; 54 new looms and 1,664 new spindles installed.
Graham. Sidney Cotton Mills. New addition, 135 by 50 feet, built to mill and 3,136 new spindles added.
Graham. Oreida Cotton Mills. Rebuilt dye house destroyed by fire. Installed new equipment.
King's Mountain. Dilling Cotton Mills. Installed 5,000 more spindles, and 2,500 twister spindles for making 40s two ply twist.
Laurinburg. Dickson Cotton Mills. Addition to mill and increased from 8,256 to 15,000 spindles.
Lowell. Spencer Mountain Mills. Addition built to mill and 6,000 new spindles installed. Also developed water power.
Marshall. Capitola Mfg. Co. 4,000 additional spindles installed.
McAdenville. McAden Mills. Installed 350 new looms in the plant.
Mooresville. Mooresville Cotton Mills. Purchased machinery of the Overland Cotton Mills, Denver, Col. (16,000 spindles, 480 looms.) To add to present equipment.
Roanoke Rapids. Rosemary Mfg. Co. added 5,000 more spindles and 148 looms; also new power house.
Rockingham. Roberdel Manufacturing Co. Addition built to Mill No. 2; installed 120 new looms.
Shelby. Shelby Cotton Mills. Addition built to mill and 1,000 new spindles put in; total of 8,500 ring spindles.
Spray. Rhode Island Co. Adding 30,000 feet floor space; will add 4,000 spindles and 200 wide looms about first of year.
Worth. Harden Mfg. Co. built addition to the mill; installed new machinery; now operate 4,160 ring and 2,000 twister spindles.

PENNSYLVANIA.

Clifton Heights. Colonial Mfg. Co. Addition of wings to main building; utilized for bleaching and drying rooms, office and stock rooms. Additional machinery also put in.
Norristown. Wyoming Spinning Co., The. Added 5,000 mule spindles.
Philadelphia. Davenport, Thomas, 2627 Mutter St. To double capacity of the plant and make finer goods.
Philadelphia. Lindley Mfg. Co. Richard Volt, proprietor. Removed to Coral and Taylor Sts.; increased capacity.
Philadelphia. Sterling Mills Co., 1824 Cadwallader St. Increased equipment of plant by installation of new machinery.
Philadelphia. Thorpe, Richard, 1657 Meadow St. Purchased looms operated by Thos. Mullholland at Ruan St. Operates as branch mill; damasks; 70 looms.
Philadelphia. Weimar Bros. Increased floor space; new machinery added.
Wilkesbarre. Wilkesbarre Lace Mfg. Co. New addition, 109 by 92 feet, 4 stories.

RHODE ISLAND.

Centreville. Centreville Mill. B. B. & R. Knight. New addition, 146 by 76 feet, 5 stories; also new boiler house; 4 new boilers placed. Increased to 32,176 ring spindles and from 750 to 1,100 looms.
Centreville. Warwick Mills. New weave shed under construction; plain and fancy fine combed cotton goods; 30,000 spindles; 550 looms. (Expect to start April, '07.)
Pawtucket. Hope Webbing Co. Built new weave shed and office.
Pawtucket. Providence Braid Co. New mill, 179 by 77 feet, erected at this place. Removed plant from Providence. Post office and freight address retained at Providence.
Warren. Warren Mfg. Co. Erecting new mill, 129 by 241 feet, 3 stories, with annex, 71 by 60 feet, and engine house, 41 by 37 feet.

SOUTH CAROLINA.

Anderson. Townsend Cotton Mill, H. C. Doubled capacity of the plant; total of 5,040 spindles.

Bamberg. Bamberg Cotton Mills. Cloth room and office (destroyed by fire), rebuilt.
Camden. Hermitage Cotton Mills. Installed 3,000 new spindles and 80 looms.
Clinton. Lydia Cotton Mills. Enlarged plant and installed 10,000 new spindles with looms.
Clover. Clover Cotton Mfg. Co. Added 5,000 more spindles and revolving flat cards.
Cowpens. Mary Louise Mills. Addition, 160 by 80 feet, 2 stories; installed 5,000 spindles for coarse yarns. Also built engine house, 32 by 32 feet; and boiler house, 32 by 36; new 250 h. p. engine installed.
Fork Shoals. Fork Shoals Cotton Mill. Capital stock increased to $100,000. Additional machinery installed and power plant increased. Total of 5,248 spindles.
Gaffney. Limestone Mills. Additional building, 225 by 100 feet, erected; added 12,000 new spindles and 300 looms; giving total of 25,000 and 650 respectively.
Greenville. Poe, F. W. Mfg. Co. Installing 752—40 inch Northrop looms, replacing same number plain looms.
Hamer. Hamer Cotton Mills. About $75,000 expended in improvements; including 5,000 additional spindles.
Jonesville. Jonesville Mfg. Co. Large addition built to mill; installed 10,000 new spindles and 300 Draper looms.
Lolo. Valley Falls Mfg. Co. Installed two 125 h. p. boilers and 250 h. p. engine; also 60 more looms, increasing to 150.
Pendleton. Pendleton Cotton Mill. Reorganized. D. P. McBrayer, president and treasurer. Installed 7,000 additional spindles.
Rock Hill. Victoria Cotton Mill. Installed 2,440 new spindles.
Union. Monarch Cotton Mills. Added 3,072 new spindles and 20 looms.
Ware Shoals. Ware Shoals Mfg. Co. New mill. 20,000 spindles; 500 looms. Sheetings and drills. Smith, Hogg & Co., s. agts. (W)
Williamston. Williamston Mills. Installed 3,584 additional spindles and 100 looms, making total of 29,568 spindles and 700 looms in the plant.

TEXAS.

Waxahachie. Waxahachie Cotton Mills. Addition built and increased spindles to 10,000 and looms, 204.

VIRGINIA.

Roanoke. Roanoke Cotton Mill Co. Installed a dye plant for yarn dyeing.

NEW BRUNSWICK.

New Brunswick, St. John. Cornwall & York Cotton Mill Co. Started work on erection of a new building, 80 by 60 feet. New looms to be installed.

WOOLEN.

CONNECTICUT.

Baltic. Shetucket Worsted Mills. Added 15 new looms, new press and folding and measuring machines.
Mechanicsville. French River Textile Co. Installed 50 new Crompton-Thayer looms, giving total of 125; also put in new electrical plant.
Mechanicsville. Silk Fibre Co., The. Removed plant from Putnam.
Meriden. Meriden Woolen Co. Installed 16 Knowles looms; also made alterations in finishing room and card room.
Stafford Springs. Rhode Island Worsted Co. Erected new weave shed, 235 by 165 feet, one story; 6 sets cards and 200 looms. (D & F) Branch of Indian Orchard, Mass.
Mystic. Mystic Woolen Co. New storehouse erected, 150 by 30 feet; replaced old looms with 25 new ones.
Norwalk. Salts Textile Mfg. Co., The. (Bridgeport) branch mill. (Purchased old Bishop Mill.)
Norwichtown. Kimball, Chas. H. Manufacturer rugs, coverlets and portieres; enlarged plant by erecting a new building and equipping same.
Rockville. Rock Mfg. Co. Addition, 150 by 50 feet, brick, one story, to finishing room! new wet and dry finishing machinery added.
Stafford Springs. Warren Woolen Co. Installed 7 new looms.
Torrington. Warrenton Woolen Company. Installed additional set of cards.

ILLINOIS.

Chicago. Aurora Wool Scouring Mills. Removed plant from Aurora, Ill., to Elston and Webster Ave.

INDIANA.

South Bend. South Bend Woolen Co. Capital stock increased to $200,000. Installed several new spinning mills, wet and dry finishing machinery and 12 looms.

KENTUCKY.

Mayfield. Old Woolen Mills. Installed 12 new looms, a 250 h. p. boiler and tentering and dyeing machinery.

MAINE.

Dexter. Dumbarton Woolen Mills. Six new mules, 320 spindles each, installed in spinning department.
Dexter. Wassookeag Woolen Co. Addition, 42 by 42 feet, 3 stories, made for increasing spinning and weaving departments.
Dover. Brown Mills. Installed new dynamo for lighting purposes; also 8 new sets cards.
Sanford. Sanford Mills. Addition, 3 stories, built for spinning purposes; also erected new dry and storehouse.
Skowhegan. Maine Spinning Co. Chas. E. Young, now president of the company. Installed additional machinery, now have total of 3,400 worsted spindles.
Wilton. Wilton Woolen Mill. New dye house erected, 36 by 45 feet. Space in old building has been used for enlarging dry finishing department.

MASSACHUSETTS.

Charlton City. Akers & Taylor Co. Installed 30 new looms.
Clinton. Earnsdale Worsted Mill. Installed 15 new looms; also made improvements in finishing room.
Cordaville. Cordaville Woolen Co. Installed new set of cards in plant; also equipped with electric lighting; dynamo installed.
East Douglas. Schuster Woolen Co. Installed 24 new looms.
Franklin. Franklin Yarn Co. New building erected, 150 by 55 feet, 3 stories, replacing plant destroyed by fire.
Lawrence. Crescent Worsted Co. Purchased three story brick mill at West Concord, N. H. Spin worsted yarns.
Lowell. Bigelow Carpet Co. Installed 50 additional looms.
Lowell. Massachusetts Mohair Plush Co. New dye house, brick, 195 by 70 feet, one story.
Lowell. Merrimack Woolen Mills. New dye house, 100 by 40 feet, built.
Lowell. Musketaquid Mills. Leased the Nesmith mill and added 30 new looms to equipment.
Monson. A. Ellis. Operates the mill formerly run by the Rhode Island Worsted Co., removed to Indian Orchard.
New Bedford. Beacon Mfg. Co. Addition, 112 by 400 feet, one story, made to plant.
North Billerica. Talbot Mills. Extended office building, making whole 3 stories high, instead of 2. First floor for office purposes; 2d, lunch, library and reading rooms; 3d, manufacturing.
Plymouth. Geo. Mabbett & Sons Co. New weave shed, 100 by 45 feet.
Plymouth. Puritan Mills. (Am. Woolen Co.) New weave shed erected; 200 new Knowles looms installed; total of 400.
Rochdale. Andrew Howarth & Son. New mill erected; 372 by 86 feet; 2 stories; steel and brick; fireproof. Equipped with 17 sets cards; 104 looms.
South Acton. South Acton Woolen Co. Built addition, 90 by 30 feet for additional floor space.
South Royalston. Geo. Whitney Woolen Co. 3 sets cards added 16 spoolers and 2 new water wheels.
Spencer. Taylor Woolen Co. Leased old Wicks Mill; operated as Mill No. 2; 12 new broad looms installed.
Warren. Sayles & Jenks Mfg. Co. Installed 28 more looms.
Webster. Chase Mills. Installed 50 heavy worsted looms.
Worcester. Queensbury Worsted Co. New mill erected at this place and branch plant at Providence removed here. Additional machinery installed.
Worcester. Worcester Dusting Mill. N. Pemstein, proprietor. Purchased additional buildings, remodelled for manufacturing wool waste. Installed new machinery. 5 dusters; 10 cards; 2 garnett machines; 2 lumpers; 2 pickers. Electric and steam power.
Worcester. Worcester Woolen Mill. Installed about 500 feet heavier shafting; 6 new fulling mills; 2 washers; one steamer and piece dye machine.

MICHIGAN.

Lexington. Fead, John L. & Sons. To rebuild yarn mill and hosiery finishing plants destroyed by fire, with latest improved methods.

MISSOURI.

Sedalia. Sedalia Woolen Mills Co. Addition built to mill. Put in new offices and some wet finishing machinery.

NEW HAMPSHIRE.

Claremont. A. Roberts & Co. New set of cards installed and new mule. Also built new dam, increasing power 400 h. p.

West Lebanon Ottaquechee Woolen Co. (North Hartland, Vt.) Branch mill. 2 sets cards.

NEW JERSEY.

Camden. Wm. Lund & Son. Increased from 900 to 1,360 worsted spindles.

Camden. B. F. Boyer Co. New building erected, 208 by 56 feet, three stories. Also new power plant.

Gloucester City. The Fries-Harley Co. Addition built to dye house, 74 by 35 feet, brick. Installed new chain warp dyeing machines.

Passaic. The Pitkin-Holdsworth Worsted Co. Addition to mill at this place and machinery of plant at New York removed here, with new equipment.

NEW YORK.

Albany. Graves, Frank B. Rebuilding property destroyed by fire.

Amsterdam. Mohawk Mills. Built addition, 300 by 80 feet, 5 stories.

Utica. Globe Woolen Company. Installed new worsted spinning machinery in department; also new drying machine, replacing one damaged by fire.

NORTH CAROLINA.

Winston-Salem. Chatham Mfg. Co. (Elkin). New mill to be established here for making high grade woolen blankets. 6 sets; 50 looms.

OHIO.

Ashtabula. Ashtabula Worsted Mills. Increased equipment to 80 looms by addition of 20 looms in a branch mill.

Cleveland. Cleveland Worsted Mill Co. New plant built; tops for worsted spinning; 25 combs (Bradford system), 32 worsted cards.

Ravenna. Ravenna Worsted Co. New building erected, 180 by 52 feet, three stories. Installed 10,000 worsted spindles.

St. Mary's. St. Mary's Woolen Mfg. Co. Increased capital stock to $175,000. Installed one set cards and one 408 spindle mule; also 5 broad looms.

PENNSYLVANIA.

Aston Mills. May Mfg. Co. Installed 100 new looms. Disposed of 200 old looms.

Bridgeport. William Barber. Installed 1 new set worsted machinery; 6 spinning frames; 3 twisting frames.

Bridgeport. James Lees & Sons Co. Increased capacity of plant and now operate 17,000 spindles; 45 worsted cards; 26 woolen sets and 28 combs. Also made stone addition, 156 by 21 feet, to wash room.

Bridgeport. Sterling Mills Co. Replaced 88 narrow looms with 38 broad ones on cassimeres.

Chester. Chester Worsted Co. New addition built to mill and 500 spindles installed.

Chester. Jas. Irving & Son. Replaced 75 narrow looms with 40 broad looms. Manufacture cassimeres only.

Clifton Heights. Runnymede Worsted Mills. New mill built, 220 by 62 feet, 3 stories. Installed 7,000 spindles, making worsted and merino yarns. (French system.)

Norristown. Coral Mfg. Co. rebuilt plant damaged by fire.

Philadelphia. Bennett & Aspden Co. Removed to old Lincoln Mill, Main St., Manayunk. Installed new finishing plant. (Plushes.)

Philadelphia. Caves, Thomas, Sons. Branch plant. 14 broad looms. Established Jasper and York Sts.

Philadelphia. Collinwood Mills. Folwell Bro. & Co., 3d and Somerset Sts. Added 10 new spinning frames and 4 twisters in spinning department.

Philadelphia. Dunlap, James, Carpet Co., 56th and Jefferson Sts. Branch established at Indiana Ave. and A St. Axminster carpets and rugs; 250 looms.

Philadelphia. Empire Cloth Mfg. Co. Absorbed Geo. E. Hoffman Mfg. Co.'s plant; consolidated plant located at Leverington Ave. and High St., Manayunk.

Philadelphia. Erben Harding & Co. Erecting building, 153 by 101 feet, 4 stories and basement, at Milnor St.

Philadelphia. Fern Rock Woolen Mills. Addition built, 173 by 70 feet, 5 stories; added 30 new worsted looms.

Philadelphia. Mulholland, Thomas, Adams Ave. and Church St. Purchased 40 additional looms for making dress goods and men's wear.

Philadelphia. Pequea Mills. Twenty additional fancy looms installed.

Philadelphia. Saxonia Dress Goods Mills. Leased quarters at Howard St. and Montgomery Ave. as an annex; new looms installed.

Philadelphia. Shaen, Robert H. Leased fourth floor of the Hoyle, Harrison & Kaye Mills, Indiana Ave. and A St., and removed there from 2638 Mascher St.

Philadelphia. Shelbourne Mills. Added 40 worsted looms.

Philadelphia. Shetland Worsted Mills. Taken over mill formerly occupied as the Manningham Worsted Co., Stenton Ave. and Haines St. Men's wear and worsted and cotton dress goods.

Philadelphia. Geo. Taylor & Bro. Removed plant to Fairhill St., added 10 more looms. Contemplate adding department for making narrow fabrics.

Philadelphia. Unity Woolen & Worsted Co. Removed to Orleans and Jasper Sts. Increased looms from 20 to 50.

Philadelphia. Walther Mfg. Co., Louis. Removed plant to Indiana Ave. and A St. Added 30 new looms.

Philadelphia. Williams Mfg. Co., John. New 4 story brick factory erected; also engine and boiler house.

Philadelphia. Wolstencroft, William, Mulberry & Bridge Sts. New additions erected, three stories, 70 by 40; 26 by 100 and 48 by 74 feet.

Philadelphia. Wright & Hall Textile Company. Men's wear and dress goods. Removed to Lomax Mill, Orleans and Jasper Sts.

RHODE ISLAND.

Bridgeton. Laurel Hill Yarn Co. New mill erected.

Glendale. Orrell, William. Added 10 new looms.

Oakland. Hope Worsted Mills. Installed 10 new worsted looms.

Peace Dale. Peace Dale Mfg. Co. Installed 50 new looms and additional spinning frames.

Providence. American Woolen Co. Addition, 250 by 65 feet, 3 stories, to Riverside Mills; for skeining and dressing departments; new boiler house, Valley Worsted Mills; one and two story additions to National and Providence Mills.

Washington. Elite Spinning Co. Incorporated with capital stock, $50,000. J. Howard Dews, president; Joseph Dews, treasurer; J. Fred Dews, superintendent. Installed 2 new sets cards.

Woonsocket. Alsace Worsted Co. Addition, 165 by 55 feet, brick, erected.

Woonsocket. Lafayette Worsted Co. Addition, 3 stories, for combing, sorting and scouring departments.

VERMONT.

Ludlow. Black River Mill. Addition built, 175 by 54 feet, two stories. Increased equipment to 8 sets cards, 10 mules and 40 looms.

WEST VIRGINIA.

Guseman. Englehart Woolen Mill Co. Rebuilt the mill destroyed by fire. Installed 2 new sets cards and 14 looms.

WISCONSIN.

Racine. Olsen Rug Co. Branch Mill. Rugs. 30 looms. (Main mill at Chicago, Ill.)

NOVA SCOTIA.

Amherst. Hewson Woolen Mills, Ltd. $1,000,000. Erecting large addition to make men's and women's knit goods, in addition to woolens. Add 3 sets woolen cards, 10 looms, 1,000 new spindles.

KNIT.

ALABAMA.

Birmingham. Jefferson Hosiery Mills. New boiler installed and 25 additional latch needle knitting machines put in. Also made aditions to dye plant.

CALIFORNIA.

Berkeley. J. J. Pfister Knitting Co. (Knit goods.) New building erected, 150 by 60 feet, 2 stories and

basement; replacing plant destroyed by San Francisco fire; 52 knitting and 30 sewing machines installed; electric power.

CONNECTICUT.

Addison. Glastonbury Knitting Co. New boiler house built. Also an addition 33 by 64 feet, 4 stories, to upper mill.

DELAWARE.

Wilmington. Delaware Hosiery Mfg. Co. New dye house and power house, erected 100 by 60 feet, one story. Also new mill building 114 by 60 feet, 4 stories.

ILLINOIS.

Freeport. Rockford Mitten & Hosiery Co. (Rockford). Branch mill established here. Wool hosiery.

INDIANA.

Fort Wayne. Wayne Knitting Mills. Increased capital to $700,000. New building erected, 270 by 40 feet, three stories and basement. Installed additional machinery.

GEORGIA.

Barnesville. Oxford Knitting Mills, Inc. Additions made to bleachery and installed new knitting and finishing machines, increasing capacity to 400 doz. per day.

Columbus. Perkins Hosiery Mills. Increased capital stock to $120,000. Expended almost $25,000 in new yarn machinery; viz.—cards, draw frames, spinning frames, cone winders and finishing machinery.

Grantville. Grantville Hosiery Mills. Addition built to the mill and 2,000 additional ring spindles installed. Also put in 50 new knitting machines.

Rome. Rome Hosiery Mills. New mill built and equipped, replacing plant destroyed by fire. Ladies' hosiery. 1 sewing machine; 107 machines. Sell direct and through J. P. Voorhees, N. Y.

MASSACHUSETTS.

Lawrence. Lawrence Knitting Co. Purchased old Tenney shoeshop at Methuen, and removed plant to same.

Lowell. Shaw Stocking Company. New mill erected to manufacture combed cotton yarns, 10s to 70s; and to allow for reorganizing present manufacturing methods and add machinery. Expect to start Jan., '07.)

MICHIGAN.

Bay City. World's Star Knitting Company. Erected new mill, 180 by 54 feet, three stories and basement; also new dye house, 50 by 50 feet, with power house, 50 by 30 feet. Installed additional new machinery.

Minneapolis. Northwestern Knitting Company. New building, 218 by 58 feet, 6 stories; with new power house, 52 by 100, one story. New power plant installed. Expect to have running Jan., '07.

NEW HAMPSHIRE.

Laconia. Stewart, Frank P. (Tilton.) Branch plant started at this place.

Manchester. Elliott Manufacturing Co. Addition built, 130 by 50 feet, two stories, for storage and stock. Space vacated equipped with additional manufacturing machinery.

NEW YORK.

Albany. Fuld & Hatch Knitting Co. Addition, 70 by 35 feet, built to mill; increased output about 500 doz. per week. Also added two 284 h. p. boilers.

Albany. Harder Mfg. Co. (Valatie, N. Y.) New building, 162 by 62 feet; 3 stories and basement. Erected for finishing at Rensselear.

Amsterdam. Blood knitting Co. New mill erected, 178 by 42 feet, 4 stories and basement. Additional machinery put in, giving plant total of 80 knitting and 275 sewing machines.

Amsterdam. John K. Stewart & Sons. Purchased Greene Knitting Mill. Remodelled and installed new machinery; 9,500 spindles.

Athens. Athens Knitting Co. Installed 11 new Cooper spring needle knitting machines. Changed from fleece-lined to wool ribbed goods.

Brooklyn. Summer Knitting Mills, The. A. Schlesinger, proprietor, 235 Ellery St. Installed power plant for operating by power instead of hand.

Brooklyn. Union Sweater Mills. Max Saldin, proprietor. Addition made to plant. Swiss ribbed vests (capacity 100 doz. daily), made in addition to sweaters.

Catskill. Wiley Mfg. Co. Installed 5 sets new cards and an extra finisher.

Cohoes. Wright's Health Underwear Co. Purchased Mohawk River Mill, formerly leased; will build an addition and remove plant at Hoboken, N. J., to this place.

Elmira. Campbell Knitting Mill Co. Secured plant formerly used by the Call Mfg. Co. Equipped for finishing knit goods and spinning cotton yarn used in knitting plant.

Honeoye Falls. Ideal Knitting Co. Installed 25 full automatic knitting machines and a steam press in the plant.

New Hartford. Lewis Knitting Co. (Sauquoit.) Leased building and equipped same for making children's cotton ribbed underwear. Capacity increased to 1,400 dozen per day. Built new storehouse, 52 by 104 feet, 2 stories, at Sauquoit.

Philmont. High Rock Knitting Co. Built addition, 140 by 78 feet, 4 stories. Installed 14 sets cotton cards and 5,000 cotton spindles.

Richfield Springs. Waiontha Knitting Co. New bleachery installed in the plant.

St. Johnsville. Lion Mfg. Co. Purchased and operate the St. Johnsville Knitting Mill, in connection with their plant.

Troy. Rob Roy Hosiery Co. Purchased two story brick building. Utilize same for making line of goods (underwear) known as "The Harderfold," for the Harderfold Fabric Co., Troy, N. Y.

Troy. Wayside Knitting Mill. Leased by Wright's Health Underwear Co. Operate carding, spinning, knitting and winding machinery, as an adjunct to the Aetna and Mohawk River Mills. Replaces mill destroyed by fire at No. Pownal, Vt. Also added 20 new knitting machines.

Utica. Capron Knitting Co. Erected new dye house, 100 by 40 feet, one and one-half stories.

Utica. Mohawk Valley Cap Factory. New addition built to plant and 50 new knitting machines installe.

Utica. Utica Knitting o. New building, 100 by 60 feet, 4 stories, known as Mill No. 6; capacity 400 dozen garments daily. (Expect to start in January.)

NORTH CAROLINA.

Albemarle. Lillian Knitting Mills. Increased capacity; added 10 machines and additional dyeing machinery.

Durham. Durham Hosiery Mills. New addition, 150 by 50 feet, 3 stories, erected; additional knitting and finishing machinery, with 3,100 spindles installed.

Elizabeth City. Elizabeth City Hosiery Mills. Installed 30 additional knitting machines and 8 loopers.

Kernersville. American Hosiery Mills. Installed additional Standard F machines in the plant.

Kernersville. Victor Hosiery Mills. Installed ten 176 needle machines for making cuff-top ladies' hose, in addition to men's half hose; changed some 84 needle to 176 needle; total of 48 knitters; 7 ribbers; 4 loopers. Finish goods.

Valdese. Waldensian Hosiery Mills. Installed 20 new knitting machines.

Winston-Salem. Carolina Mills Company. Purchased plant of Centaur Knitting Co. (High Point), and removed to this place; larger quarters have been secured.

OHIO.

Cleveland. N. J. Rich & Co. Erecting new mill.

Piqua. Superior Underwear Co. Removed plant here from Bowling Green. Increased facilities.

PENNSYLVANIA.

Bernville. Durable Hosiery Mill (Branch Robesonia Knitting Mill). Walter V. R. High, superintendent. Half hose, using yarns, 9s to 16s; 20 knitting machines. Finishing done at Robesonia Mill.

Bloomsburg. Bloomsburg Knitting Mills. Barger, Bains & Munn (branch of mill at Phila.). 10 ribbers; 3 loopers; 15 machines. (Dyeing and finishing done at Phila.)

Chambersburg. Chambersburg Hosiery Co. Removed to new building erected. 150 by 52 feet, 3 stories; increased capacity to 1,200 dozen pairs daily.

Doylestown. Doylestown Hosiery Mills. Installed new dye plant.

Hamburg. W. Scott Fisher & Son. Underwear. Installed additional machinery, greatly increasing capacity.

Mt. Carmel. Taubel, Wm. F. Addition built to plant; new machinery installed, giving total of 105 knitting machines and 38 loopers.

Palmyra. Kreider Hosiery Mills. Erecting new building, 120 by 40 feet, three stories.
Philadelphia. Adams Hosiery Co., 2420 Waterloo St. Propose installing machinery for manufacturing children's ribbed hose.
Philadelphia. Aucott, E. J. Plant removed to 4945-47 Wakefield St., Germantown. Increased; total equipment, 35 knitters, 2 welters, 3 loopers.
Philadelphia. Carlton Knitting Co., 23d and Hamilton Sts. Astrachan. stockinet, Jersey cloths and bathing suits in addition to regular line.
Philadelphia. Fussner Hosiery Mills. Joseph W. Fussner, proprietor. Removed to 2411 N. Howard St. Increased facilities.
Philadelphia. German-American Hosiery Co. New story added to mill and 24 full fashioned and 12 latch needle knitters installed.
Philadelphia. Melbourne Knitting Mills. Added 20 new machines.
Philadelphia. Salts Textile Co., Fretz Bldg. R. J. Steiner, superintendent. Elderdown and astrakans. 10 machines. (Branch of Bridgeport, Conn.)
Philadelphia. Simons & Struve Hosiery Co. Removed annexes to main plant on Frankford Ave., Frankford.
Philadelphia. Sprowles, J. H., Co., Wayne Junction. Installed considerable machinery for making lace work, also increased capacity in finishing department.
Philadelphia. Wolstencroft, Harry. Installed machinery for embroidering hosiery.
Schuylkill Haven. Bast, J. F. Royal Knitting Mills. Addition built to mill, 60 by 55 feet, three stories, brick. Increased facilities.
Schuylkill Haven. Berger, H. & Son. Rebuilt knitting and storage buildings destroyed by fire.
Schuylkill Haven. Meck & Co. New mill erected, 90 by 48 feet, two stories and basement. Installed additional machinery.
Scranton. Groat Knitting Co. Erected new buildings, one 240 by 50 feet, three stories and one, 100 by 80 feet, one story. Capacity of the plant doubled; output increased to 2,000 doz. fleece underwear per day. Also installed additional machinery in standing building.
South Bethlehem. Austin Knitting Co. Installed 20 additional Standard machines in plant.
York. Crystal Hosiery Co. Removed to larger quaters. Installed number of new "Standard" and "Geo. D. Mayo" knitters. Also drying machine and presses.

RHODE ISLAND.

Pawtucket Narragansett Textile Co. Building new mill, 103 by 60 feet, two stories and basement, brick. Will install 26 knitting and about 25 sewing machines, for making men's winter weight garments.

SOUTH CAROLINA.

Spartanburg. Crescent Mfg. Co. To install 25 new knitting machines and other equipment.

TENNESSEE.

Chattanooga. Davis Hosiery Mills. Increased capital stock from $100,000 to $200,000. New building erected, 225 by 62 feet, 2 stories. Installed latest improved machinery.
Knoxville. Standard Knitting Mills. New building erected. Installed 5,000 spindles making cotton hosiery yarns, 7s, 8s single. Also put in 14 new knitting machines.

UTAH.

Salt Lake City. Salt Lake Knitting Works. To remove to new four-story building; will install additional machinery.

VIRGINIA.

Norfolk. Northside Knitting Co. Doubled equipment of the plant.

WISCONSIN.

Menasha. Fox River Valley Knitting Co. Added 4 new mitten and 5 hosiery machines.

CANADA.

Ontario, Alton. Beaver Mills. Installed new knitting machines. 40 h. p. engine; 60 h. p. boiler; also added new washer.
Ontario, Clinton. Clinton Knitting Co. Installed 8 new knitting machines; 4 Standard F; 4 Paxton & O'Neill; also singeing machine.
Ontario, Dunnville. Monarch Knitting Co. Installed one new set woolen cards.
Ontario, Galt. Galt Robe Company. Built addition to mill, 50 by 60 feet, three stories; part to be utilized for boiler house; new boiler put in; also knitting and weaving machinery.
Ontario, Glen Williams. Beaumont, Joseph. New 2-story building erected, 80 by 54 feet; installed new set cards and 400 mule spindles. Also added Jenckes knitting machines.
Ontario, Hamilton. Chipman-Holton Knitting Co. Erected new dye and bleach house; also increased capacity in knitting department.
Ontario, Hamilton. Ellis Mfg. Co. Added 5 (Charles Cooper) ribbed machines.
Ontario, Ingersoll. Waterhouse, T. & Co., Ltd. New 3-story brick mill, 120 by 50 feet. New machinery to be installed. Will start Feb., '07.
Ontario, Paris. Penman Mfg. Co. Erecting several new brick buildings. One, three stories, for carding and spinning mill; the others for boiler and engine house and warehouse. To install additional carding and knitting machines.
Ontario, Toronto. Simpson, Joseph & Sons. Erected new 6 story brick building; installed 7,000 spindles for making yarns for knitting plant.
Ontario, Walkerton. Walkerton Hosiery Co. Added several Excelsior automatic knitters and Ruth ribbers.

NOVA SCOTIA.

Truro. Stansfields, Ltd. Increased capital stock to $750,000. Extend knitting mills and built worsted mills for making yarns.

SILK.

CONNECTICUT.

Norwalk. Muller Gloria Silk Mills. Addition built, 130 by 75 feet, brick; 75 new looms installed.
Norwich. Martin, J. B. Co. New weave shed, 140 by 111 feet; to install 100 looms; electric motors.
Shelton. Sidney Blumenthal & Co. Erected new buildings, 80 by 80 feet, one story, and 36 by 80 feet, 2 stories, brick; for finishing purposes. Old buildings equipped with additional looms; capacity 250.
South Manchester. Cheney Bros. New piece dye house erected, 225 by 60 feet, 2 stories.

MARYLAND.

Lonaconing. Klots Throwing Co. (Cumberland). Erecting new silk mill at this place.

MASSACHUSETTS.

Fitchburg. Cornforth & Marx . Increased capacity plant by addition 50 looms.

NEW JERSEY.

Paterson. Victory Silk Co. Additional looms installed; total of 200.
Trenton. Straus, F. A. & Co. Silk plant at Paterson removed to Trenton.

NEW YORK.

Binghamton. Binghamton Silk Mills. Removed to building remodeled; capacity increased.
Brooklyn. Salmon, Wm., Lorimer St. Fitted up new dye house.
Corning. Merrill Silk Co. (Hornellsville). Erected new mill at this place; make silk gloves; 200 sewing machines.
Matteawan. Ellrodt Lynch Co. Built addition to mill. Total of 12,000 silk spindles.
Ogdensburg. Ogdensburg Silk Mill. New addition, 110 by 109 feet, under way.
Port Jervis. Katterman & Mitchell Co. Installed 15 new looms.

PENNSYLVANIA.

Bangor. Crown Silk Mfg. Co. Addition 42 by 100 feet, 2 stories, built to mill; added 6 large knitting looms; 150 sewing machines; 120 winding spindles; 3 warping mills.
Berwick. The Baer Co. (Lehighton). New mill erected here and equipped with 10,000 spindles (accommodation for more than 20,000).
Carlisle. Lockman Bros. Addition built, 120 by 50 feet, 3 stories. To add about 30 more looms; to make black ribbons exclusively.
Danville. F. Q. Hartman, Inc. ($365,000). Incorporation of the Danville and Riverside Mills of the F. Q. Hartman group. Annex being built to Riverside plant, new boilers to be installed and additional machinery.

Emaus. Dery, D. G. (Catasauqua). Branch mill. Dress silks. (To start up about Feb. '07.)
Parsons. Parsons Silk Mill. Addition built to plant and capacity increased.
Philadelphia. Linton, Horace & Bro., 3061-81 Ruth St. Added 16 new looms.
Pittston. Valentine & Bentley Silk Mill. Addition, 100 by 65 feet, two stories and basement.
Scranton. Sauquoit Silk Mfg. Co. (Phila.). Branch mill; silk throwing.

VIRGINIA.

Norfolk. Norfolk Silk Co. Installed 87 new looms in mill.

MISCELLANEOUS.

CONNECTICUT.

Sterling. Sterling Branch U. S. Finishing Co. New buildings erected: one, 115 by 52 feet, three stories; 41 by 52 feet, one story; 20 by 36 feet, one story. Also added 1,000 h. p. to boiler plant.

MARYLAND.

Baltimore. Wachter, Frank C. Erected new building, 207-209 W. German St., for general offices; also installed waterproofing plant.

MASSACHUSETTS.

Attleboro. Wolfenden, R. & Sons. Built addition 100 by 40 feet to dye works.
Fall River. American Printing Co. New dye house built. 178 by 96 feet, 3 stories.
Fall River. Fall River Bleachery. Equipped plant with electricity, replacing steam.
Lawrence. Lawrence Dye Works. Addition built to plant.
Methuen. Tekcips Dyeing & Finishing Co. Building addition 40 by 75 feet, 2 stories. To add winding and spooling machinery.
Millbury. United States Linen Co. Installed plant for linen finishing and bleaching.
Plymouth. Plymouth Cordage Co. (North Plymouth). Erected new mill; greatly increasing capacity.

MINNESOTA.

Winona. Union Fibre Co. Rebuilt plant destroyed by fire with fireproof building.

PENNSYLVANIA.

Bondsville. Pearson, Fred. Dyeing and finishing plush. (Branch of main mill at Phila.)
Philadelphia. Allen Dyeing Co. Removed to new plant, N. E. corner Trenton Ave. and Cambria St. New equipment installed, including 2 new 300 h. p. boilers.
Philadelphia. Angola Dyeing Co. Branch plant started on Clearfield St., above Front, dyeing colors on hosiery; also bleaching. Building to be enlarged and entire plant to be located here. Additions, 195 by 45 feet, for oxidized black dyeing plant and power house, 42 by 62 feet.
Philadelphia. Bernstein Mfg. Co., 3d and Allegheny Ave. New one-story and basement building erected; additional machinery installed for mattress felts.
Philadelphia. Boston, John. Keystone Dye Works, 1929 Westmoreland St. Installed additional machines, including tom-tom and 2 chroming machines.
Philadelphia. Merit Finishing Works. Smith & Quicksall, Frankford. Rebuilt plant destroyed by fire.
Philadelphia. Nicetown Dye Works. Two-story brick building erected, 64 by 64 feet, at C St., above Westmoreland.
Philadelphia. Peerless Bleach Works, Elizabeth St., below Unity. New building erected, 100 by 40 feet, brick, two and one story. Latest improved machinery installed for bleaching hosiery, knit goods and piece goods. Contemplate adding building for dyeing sulphur colors.
Philadelphia. Sarfert, Max. Germania Dye Works. Installed machinery for dyeing yarn on cops, cones and tubes. Proposes installing coning machinery.
Philadelphia. Stanley Mfg. Co. (Frankford). Installed 3 additional twisters, 2 winders and several spoolers.
Philadelphia. Summerdale Dyeing, Print & Finishing Works (Holmesburg). Addition, 40 by 60 feet, 2 1/2 stories.
Philadelphia. Venango Dyeing & Printing Works. Equipped plant for bleaching hosiery.
Reading. Neversink Dyeing Co. $45,000; James H. Knoll, president; Nathan S. Althouse, treasurer; C. Scott Althouse, superintendent. (Continue plant of Knoll & Althouse.) Erected one new building and an addition to present plant.

RHODE ISLAND.

Pawtucket. Harrison Yarn & Dyeing Co. Installed new 400 h. p. boiler and 334 h. p. engine.
Woonsocket. Woonsocket Dyeing & Bleaching Co. Built addition to plant; production increased to 6,000 lbs. per day.

CANADA.

Ontario, Toronto. Holdsworth & Co. Removed to new building; increased facilities.
Welland. Plymouth Cordage Co. (Plymouth, Mass.). Branch mill.

NATIONAL ASSOCIATION OF WOOLEN AND WORSTED OVERSEERS.

The 25th annual convention of the National Association of Woolen and Worsted Overseers was held at the American House, Boston, November 12, 1905. On account of ill health, President Walker was unable to preside and the meeting was called to order at 11 o'clock by Vice-President Geo. W. Gerry. After the usual reports of the officers and committees much time was given to the consideration of the question of membership cards. Charles Hurst of Providence, one of the committee appointed to investigate the matter, reported on the cost of a folder for that purpose, and S. B. Roy, of Worcester, Mass., offered to furnish these folders to the members as a memorial to his father, the late B. S. Roy. This generous offer was accepted and a vote of thanks extended to him. A committee of four consisting of Charles Hurst, Herman Embach, Chas. McDowell and Louis Carmack, were appointed to make arrangements for the semi-annual meeting to be held the third Saturday in May, 1907, at Providence, R. I. Walter Pickford, John Pickford and John Simpson were chosen to draft a new set of rules to govern the proceedings of the Association. The new Official Manual reflects great credit on its compiler. After the dinner at which over 200 members and guests were present, the officers for the ensuing year were chosen as follows:

For President, George W. Gerry of Collinsville, Mass.; for First Vice-President, James McDowell of Providence, R. I.; for Second Vice-President, James E. O'Kell of Pascoag, R. I.; for Third Vice-President, James H. Pickford of Clinton, Mass.; for Secretary, Walter Pickford of Leominster, Mass.; for Treasurer, Thomas Buchan of Hyde Park, Mass.; for Secretary of Beneficiary

Department, George W. Burr of Guild, N. H.; for Treasurer of Beneficiary Department, Thomas Buchan of Hyde Park, Mass.; for Trustees, John Thornton of Glendale, R. I.; Eleazar Davies of Plymouth, Mass.; Louis Carmack of Providence, R. I.

Following is the list of new members elected:

ACTIVE MEMBERS.

Connecticut:

Andrew Archer ..... Mechanicsville
Bert O. Cooke ..... Central Village
Frank L. Crossley ..... Windsor Locks
Thomas Hanley ..... Baltic
Charles Henault ..... Norwich
Arthur E. Robinson ..... Montville
D. R. Toop ..... Rockville

Maine:

James Magner ..... Madison

Massachusetts:

F. W. Birkenshaw ..... Pittsfield
Fred H. Birkley ..... Lowell
Joseph Bouley ..... Collinsville
Herman Bosbach ..... Holyoke
Chas. H. Browne ..... Cherry Valley
Eli Eyers ..... Andover
A. C. Fredericks ..... Pittsfield
John H. Greenhalge ..... Gilbertville
Frederick J. Heine ..... Collinsville
Thomas Hughes ..... South Barre
George W. Lawton ..... Lawrence
John J. Lenahan ..... New Bedford
Henry Mahoney ..... North Billerica
August C. Neff ..... West Millbury
John O'Leary ..... Chapinsville
Alec Roggers ..... Lawrence
Wm. H. Thomas ..... Chapinsville
John White ..... Chapinsville
C. A. Williamson ..... Hope Valley

Rhode Island:

Frederick W. Allen ..... Harrisville
John Berube ..... Woonsocket
Thomas F. Cooney ..... Wyoming
Eugene H. Deady ..... Manton
J. F. B. Doyle ..... Thornton
Thomas Fraser ..... Glendale
John E. Hay ..... Woonsocket
Frederick Jones ..... Centreville
Anthony Keenan ..... Wyoming
Anthony Laronie ..... Greenville
Thomas R. McClure ..... Woonsocket
John J. Quinn ..... Nasonville
Thomas F. Riley ..... Pascoag
R. Shepard Schoules ..... Providence

ASSOCIATE MEMBERS.

John A. Barrington ..... Boston, Mass.
G. R. Howarth ..... Careyville, Mass.
S. B. Roy ..... Worcester, Mass.

Following is a list of the members present:

Connecticut:

E. H. Ambach ..... Norwichtown
Wm. H. Batty ..... Putnam
J. E. Bradley ..... Rockville
James J. Callanan ..... Plainville
T. H. Donlevy ..... Danielsonville
Patrick F. Doyle ..... Elmville
C. M. Ellis ..... Putnam
Joseph P. Faron ..... Buckland
Geo. W. Gammon ..... Manchester
Wm. Gillooly ..... Elmville
John Heaton ..... Stafford Springs
Chas. J. Henault ..... Norwich
J. A. Holmes ..... Putnam
Wm. M. Lacey ..... Central Village
John T. Lyons ..... Norwich
F. C. Neff ..... Rockville
James E. Reynolds ..... Putnam
Thomas Richmond ..... Elmville
J. T. Rogers ..... Rockville
A. B. Shepard ..... Stafford Springs
W. E. Thorbin ..... Norwich
Samuel Walsh ..... Putnam

Maine:

Harry Balcomb ..... West Buxton
George Newry ..... Lewiston
M. C. O'Brien ..... Oldtown

Massachusetts:

William Ahearn ..... Worcester
T. W. Biddles ..... Lawrence
T. F. Brennan ..... East Dedham
J. T. Broadhead ..... Cherry Valley
Harry R. Broughton ..... Plymouth
Thomas Buchan ..... Hyde Park
J. G. Burns ..... Worcester
Thos. E. Byron ..... Saxonville
W. E. Chamberlain ..... Saxonville
James Cobb ..... Careyville
Joseph W. Costello ..... Collinsville
M. J. Coughlan ..... Monson
T. J. Cronin ..... Cherry Valley
A. B. Crowell ..... Concord Junction
Eleazer Davies ..... Plymouth
John J. Davitt ..... Lowell
Lewis Dix ..... Lawrence
C. T. Donlevy ..... Boston
J. E. Dowd ..... Worcester
Dennis Duffy ..... North Bellingham
E. S. Eddy ..... Boston
L. M. Ellison ..... Worcester
D. O. Evans ..... Careyville
E. J. Feeley ..... Boston
E. B. Flannagan ..... North Bellingham
J. H. Ford ..... Worcester
H. B. Fraser ..... East Douglass
Asa Garth ..... Fitchburg
Geo. W. Gerry ..... Collinsville
Fred H. Greene ..... Worcester
Fred. Gunther ..... West Fitchburg
R. J. Haggett ..... Medford
P. F. Hanlon ..... Lowell
Wm. M. Harding ..... Worcester
W. H. Hassett ..... Worcester
James H. Hillens ..... Lawrence
Arthur W. Holden ..... North Billerica
James H. Horsfall ..... Lowell
John Hughes ..... North Billerica
O. F. Ireland ..... West Somerville
A. E. Jones ..... Northboro
Chas. J. Keegan ..... Uxbridge
Chas P. Kennedy ..... Millbury
James H. Laler ..... Maynard

J. N. LaRose ..... Cherry Valley
John Lawton ..... Maynard
John W. Linehan ..... Boston
Allen Loft ..... Plymouth
J. J. Magoon ..... Maynard
W. R. McConachia ..... Millbury
J. T. McCormack ..... Hyde Park
Herbert Midgely ..... Worcester
Fred Moseley ..... Canton Junction
James E. Mullen ..... North Bellingham
Thos. F. Nulty ..... Uxbridge
M. J. O'Brien ..... Lawrence
John Ogden ..... Lowell
Frazier L. O'Leary ..... Boston
Archibald Ormiston ..... Concord Junction
Wm. E. Owens ..... No. Oxford
James Patrick ..... Lawrence
Thomas Pendergast ..... Lowell
Walter Pickford ..... Leominster
James J. Rae ..... Cherry Valley
Peter Rainville ..... Uxbridge
Hiram Rathburn ..... Byfield
Joseph Ridings ..... Methuen
Turner Rollinson ..... Franklin
John Sanderson ..... Gilbertville
G. W. Schellschmidt ..... East Douglass
Joseph Schofield ..... Uxbridge
Henry Shaw ..... Leominster
John Sheehan ..... Saugus
David Shepard ..... Gilbertville
P. F. Sheridan ..... Andover
John R. Simpton ..... Fitchburg
Thomas E. Smith ..... Uxbridge
F. L. St. George ..... No. Bellingham
James Sullivan ..... Holden
A. L. Tainter ..... Lowell
E. G. Tainter ..... Wamesit
Mark Tempest ..... Holyoke
S. Walker ..... Uxbridge
Henry Walton ..... Plymouth
Thos. R. Webster ..... Lowell
J. J. Wehinger ..... Worcester
Daniel F. Welch ..... Millbury
J. W. Whitehead ..... Lowell
W. H. Wilcox ..... Watertown

New Hampshire:

W. H. Adams ..... East Rochester
Geo. W. Burr ..... Newport
J. B. Connell ..... Lebanon
Geo. A. Eliot ..... East Rochester
Geo. Fraser ..... Harrisville
W. H. Lord ..... East Rochester
Thomas Mullen ..... Franklin
Christopher Patten ..... Tilton
D. C. Scott ..... Penacook
Thomas P. Smith ..... Harrisville
A. S. Taylor ..... Harrisville

Pennsylvania:

J. B. Jones ..... Philadelphia

New Jersey:

Daniel Gillan ..... Passaic
Joseph Keefe ..... Passaic

Rhode Island:

Herman Ambach ..... Lymansville
Chas. H. Atridge ..... Providence
R. E. Bailey ..... Centreville
Fred Carter ..... Pascoag
D. Edgar Coe ..... Pawtucket
J. H. Creaser ..... Harrisville
Thos. F. Croffswell ..... Ashaway
Joseph T. Dolan ..... Harrisville
Edward Donahue ..... Harrisville
John F. Drummond ..... Hope Valley
M. J. Dwyer ..... Nasonville
L. H. Eddy ..... Westerly
Frank Eilers ..... Lymansville
James F. Faron ..... Lymansville
F. P. Gallagher ..... Woonsocket
Abraham Hey ..... Woonsocket
R. E. Horan ..... Pascoag
C. M. Hurst ..... Providence
James Knox ..... Glendale
D. O. A. Lattimer ..... Greenville
P. J. Malone ..... Bridgton
James McDowell ..... Providence
Lees Mellanson ..... Mapleville
James Minto ..... Greenville
Wm. F. Mulligan ..... Harrisville
W. F. Myers ..... Lafayette
Ben Oldfield ..... Washington
James E. O'Kell ..... Pascoag
Thomas J. O'Malley ..... Providence
Martin O'Toole ..... Woonsocket
Richard Owans ..... Providence
J. H. Parker ..... Lafayette
Edward P. Power ..... Kenyons
Patrick Purcell ..... Manton
T. J. Ryan ..... Pascoag
T. J. Sexton ..... Greenvlle
R. C. Shortman ..... Providence
Andrew Smith ..... Kenyons
James Southwell ..... Providence
John Thornton ..... Chepachet
James Toas ..... Hope Valley
James A. Toop ..... Washington
J. E. Truesdell ..... Providence
David Webster ..... Harrisville
Arthur J. Wicks ..... Nasonville
Fred R. Williamson ..... Washington
James Wilson ..... Manton

Vermont:

John Ingham ..... Winooski
John R. MacGregor ..... Bridgewater
Peter McMillan ..... Ludlow

Russia has 16,000 manufacturing establishments, employing over one million people.

Of the 14 million pounds of raw silk imported into the United States in 1905-06, 7 million pounds came from Japan, 3 million pounds from Italy and 2 million pounds from China.

Raw cotton, food stuffs, iron and steel products were the three chief articles of export from the United States in the year ending June 30, 1906. Cotton manufactures were eighth in the list.

TEXTILE PROCESSES.

EDITED BY E. A. POSSELT.

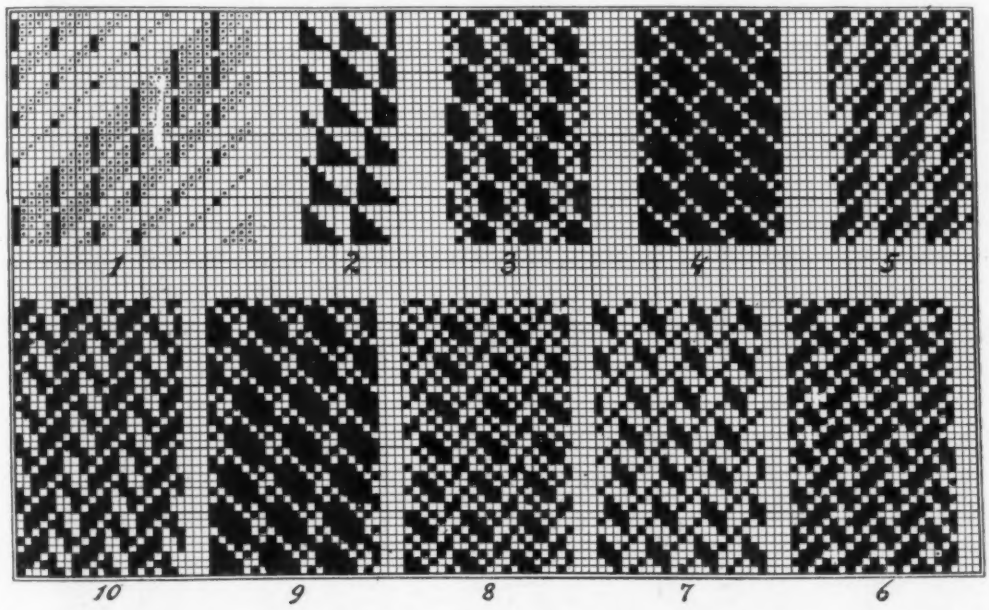
OUR TEXTILE SCHOOL.

DIAGONALS OR STEEP TWILLS.

This system of steep twills has for its foundation our regular, i. e., 45° twills, using in this instance every fifth warp thread of said regular twill taken in rotation for the construction of the new diagonal; a feature readily explained in connection with diagram, Fig. 1, which, considering ■ and ⊡ type for risers, one repeat of the weave is reading: $\frac{5}{5}\frac{1}{4}\frac{2}{3}\frac{3}{2}\frac{4}{1}$ 30-harness regular twill. Using every fifth warp thread of this weave, taken in rotation, for the construction of the new diagonal results in weave, Fig. 2; the same repeating on 6 × 30, and what will explain to us that any foundation twill repeating on a number of threads which is a multiple of five, will call only for one-fifth of the number of warp threads in the repeat of the diagonal compared to that of its foundation twill.

Proof: 30 (repeat of foundation twill) ÷5= 6 (repeat of the new diagonal).

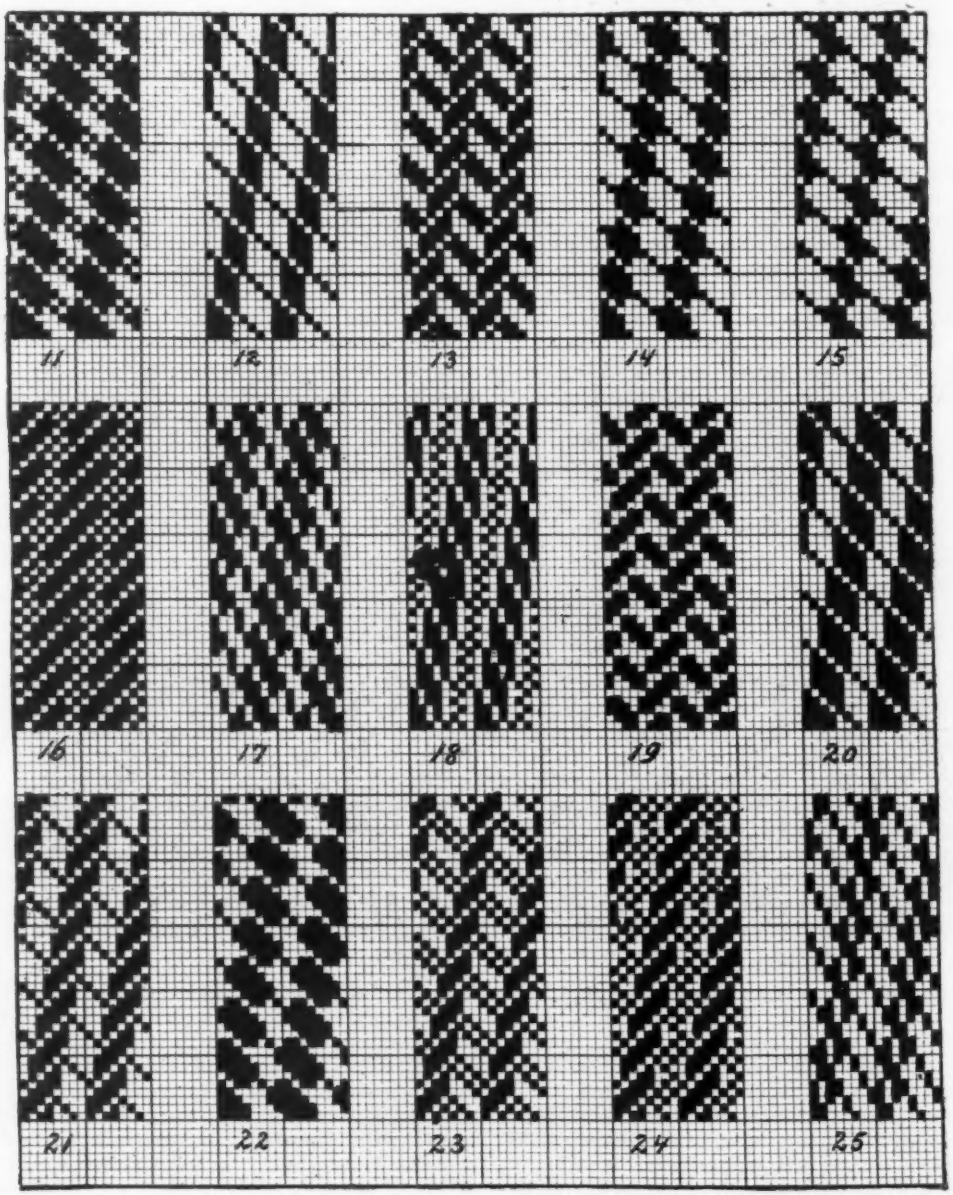
This will at the same time indicate to us that in the construction of these diagonals, we have to use regular twills of a rather large repeat for their foundation, for the fact that as previously shown, only every fifth warp thread of the foundation weave is used in the construction in the new weave, in turn reducing the repeat of the weave to one-fifth of that of the foundation weave, with reference to warp threads, i. e., harnesses. Provided we deal with a foundation weave which is not a multiple of five, we then have to continually draft said foundation weave; take 1, miss 4, continually over and over again until repeat of new weave is obtained, and for which reason, for example, a 13-harness foundation twill will consequently call for an 80° steep twill repeating on 13 × 13; again a 21-harness foundation weave will in turn produce an 80° steep twill repeating on 21-warp threads, whereas for example, a 25-harness foundation twill will result in an 80° steep twill repeating on (25 ÷ 5 = 5) 5 harnesses.



In the same manner as we have constructed weave Fig. 2 from a 30-harness 45° twill, weaves Figs. 3, 4, 5, 6 and 7 are constructed from 30 harnesses, regular twills, viz:

Weave Fig. 3 has for its foundation the $^{3}_{1}{}^{4}_{1}{}^{5}_{1}{}^{4}_{3}{}^{1}_{1}{}^{1}_{1}{}^{1}_{1}{}^{1}_{1}{}^{1}_{1}$ 30-harness reg. twill.

Weave Fig. 4 has for its foundation the $^{5}_{1}{}^{3}_{1}{}^{1}_{1}{}^{1}_{1}{}^{3}_{1}{}^{5}_{1}{}^{5}_{1}$ 30-harness reg. twill.



Weave Fig. 5 has for its foundation the $^{3}_{5}{}^{1}_{3}{}^{1}_{3}{}^{1}_{1}{}^{3}_{1}{}^{3}_{1}{}^{3}_{1}$ 30-harness reg. twill.

Weave Fig. 6 has for its foundation the $^{1}_{1}{}^{1}_{3}{}^{3}_{1}{}^{3}_{1}{}^{1}_{1}{}^{1}_{1}{}^{3}_{1}{}^{3}_{3}$ 30-harness reg. twill.

Weave Fig. 7 has for its foundation the $^{3}_{1}{}^{1}_{3}{}^{1}_{3}{}^{1}_{1}{}^{3}_{3}{}^{3}_{3}$ 30-harness reg. twill.

Weaves Fig. 8, 9 and 10 are 80° steep twills, obtained from 35-harness regular twills, consequently repeating on $(35 \div 5 = 7)$ 7-harnesses $\times$ 35 picks.

The foundation twill for weave Fig. 8 is the $^{3}_{1}{}^{1}_{1}{}^{2}_{2}{}^{1}_{2}{}^{1}_{3}{}^{2}_{2}{}^{1}_{2}{}^{2}_{1}{}^{1}_{1}{}^{3}_{1}{}^{1}_{1}$ 35-har. regular twill.

The foundation weave for weave Fig. 9 is the $\frac{5}{1}\frac{3}{1}\frac{1}{1}\frac{2}{2}\frac{1}{1}\frac{3}{1}\frac{5}{1}\frac{5}{1}$ 35-harness, 45° twill; and the foundation for weave Fig. 10 is the $\frac{3}{1}\frac{1}{3}\frac{3}{4}\frac{3}{3}\frac{1}{1}\frac{3}{1}\frac{3}{1}\frac{3}{1}$ 35-harness regular twill.

In connection with weave 11 to and inclusive 25 a collection of 8-harness 80° diagonals, or steep twills, is given, every one of which has for its foundation its corresponding 45° regular twill, viz: Weave Fig. 11 has for its foundation the $\frac{5}{1}\frac{3}{3}\frac{1}{1}\frac{1}{3}\frac{1}{1}\frac{3}{1}\frac{5}{1}\frac{5}{1}$ 40-harness 45° twill.

Weave Fig. 12 has for its foundation the $\frac{5}{5}\frac{1}{5}\frac{1}{5}\frac{1}{5}\frac{5}{1}\frac{5}{1}$ 40-harness 45° twill.

Weave Fig. 13 has for its foundation the $\frac{3}{3}\frac{3}{3}\frac{3}{3}\frac{3}{1}\frac{1}{1}\frac{3}{1}\frac{3}{1}\frac{3}{1}$ 40-harness 45° twill.

Weave Fig. 14 has for its foundation the $\frac{5}{1}\frac{3}{4}\frac{1}{5}\frac{1}{5}\frac{1}{4}\frac{3}{1}\frac{5}{1}$ 40-harness 45° twill.

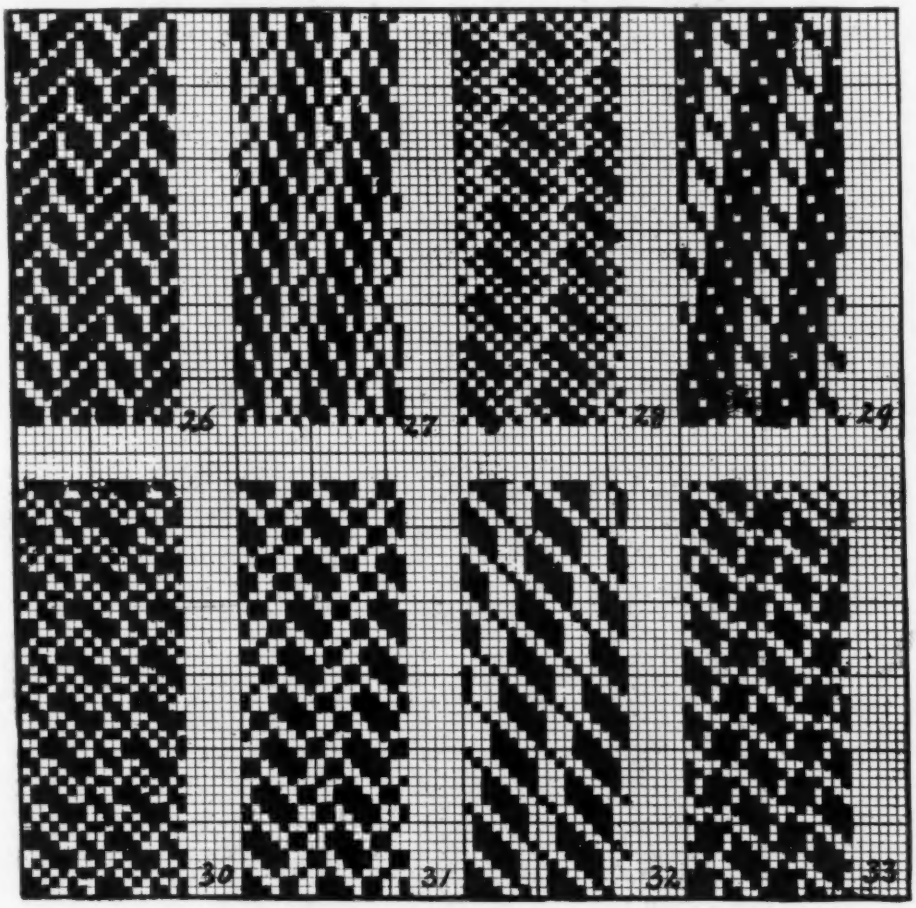
Weave Fig. 15 has for its foundation the $\frac{5}{1}\frac{1}{4}\frac{2}{2}\frac{5}{1}\frac{5}{2}\frac{2}{4}\frac{1}{5}\frac{1}{1}$ 40-harness 45° twill.

Weave Fig. 16 has for its foundation the $\frac{3}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{3}{1}\frac{3}{1}\frac{3}{1}\frac{3}{1}\frac{3}{1}\frac{3}{1}\frac{3}{1}$ 40-harness 45° twill.

Weave Fig. 17 has for its foundation the $\frac{5}{5}\frac{2}{2}\frac{5}{2}\frac{5}{2}\frac{5}{2}\frac{2}{5}\frac{3}{1}$ 40-harness 45° twill.

Weave Fig. 18 has for its foundation the $\frac{5}{5}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{5}{5}\frac{5}{2}\frac{5}{2}$ 40-harness 45° twill.

Weave Fig. 19 has for its foundation the $\frac{3}{3}\frac{2}{1}\frac{2}{2}\frac{3}{1}\frac{3}{1}\frac{3}{1}\frac{2}{2}\frac{1}{1}\frac{2}{3}\frac{3}{3}\frac{3}{3}$ 40-harness 45° twill.



Weave Fig. 20 has for its foundation the $\frac{5}{5}\frac{1}{5}\frac{1}{5}\frac{5}{1}\frac{5}{1}\frac{5}{1}\frac{5}{1}$ 40-harness 45° twill.

Weave Fig. 21 has for its foundation the $\frac{3}{1}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{1}\frac{3}{1}\frac{3}{1}\frac{3}{1}\frac{3}{1}\frac{3}{1}$ 40-harness 45° twill.

Weave Fig. 22 has for its foundation the $\frac{5}{1}\frac{4}{2}\frac{2}{5}\frac{1}{5}\frac{2}{2}\frac{4}{1}\frac{5}{1}$ 40-harness 45° twill.

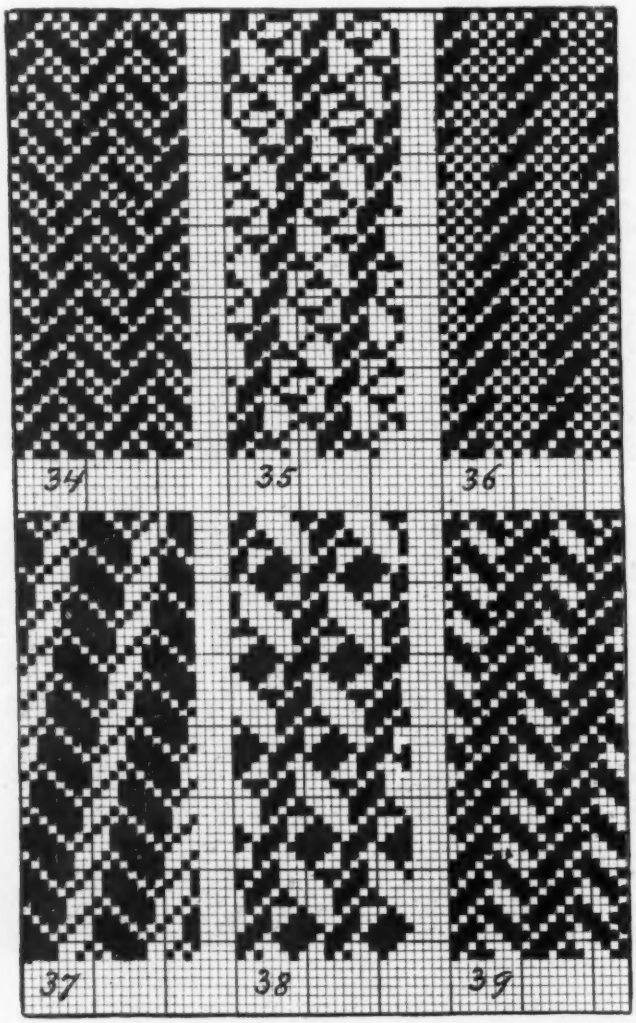
Weave Fig. 23 has for its foundation the $\frac{3}{1}\frac{1}{3}\frac{1}{3}\frac{1}{3}\frac{1}{1}\frac{1}{3}\frac{1}{1}\frac{1}{3}\frac{1}{1}\frac{3}{1}\frac{3}{1}\frac{3}{1}$ 40-harness 45° twill

Weave Fig. 24 has for its foundation the $\frac{3}{1}\frac{1}{3}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{3}{1}\frac{3}{1}\frac{3}{1}\frac{3}{1}\frac{3}{1}\frac{3}{1}\frac{3}{1}$ 40-harness 45° twill.

Weave Fig. 25 has for its foundation the $^{5}_{2}{}^{2}_{5}{}^{2}_{5}{}^{2}_{5}{}^{2}_{2}{}^{5}_{3}$ 40-harness 45° twill.

Weave Fig. 26, to and inclusive 33, are 80° diagonals or steep twills, repeating on 9 × 45, and consequently have for their foundation (9 × 5 = 45) 45-harness regular twills.

Weave Fig. 34 to and inclusive 39 give us six examples of 80° diagonals, i. e., steep twills repeating on 10-harnesses and which naturally have for their foundation their respective (10 × 5 = 50) 50-harness regular twills and which the student, in the manner as explained



Having explained the foundation in connection with the 6, 7 and 8 harness 80° steep twills, no further special explanation on our part with reference to quoting the foundation with these 9-harness 80° twills will be required, the same being readily obtained by the student by consulting the first warp thread of each diagonal, and putting the same down as the foundation for the 45° regular twill.

with the 9-harness 80° diagonals, previously given, will obtain by simply reading off the first warp thread of the steep twill for the first warp thread of its foundation, i. e., 45° twill.

Russian Turkestan in 1902 had 531,037 acres planted to cotton with a yield of 950,320 hundred weight.

OPENING AND STRETCHING FABRICS.

It is well known that it is rather difficult to run cloth, more particularly when in a moist condition, any distance without its creasing and running in a zigzag manner. To overcome this disadvantage in connection with any machine where a smooth feeding is necessary, is the object of adding, at the place where the fabric to be treated enters the machine, one, or, what is more frequently done, a series of two or three spreader rolls, and which besides feeding the cloth in its opened width to the machine, at the same time impart to the fabric thus treated a spreading out effect in its width, in turn removing any wrinkles, creases or curled selvages formed in the fabric, as well as recover the width to the fabric, it may have lost in the preceding process.

One of the chief places of usefulness of these spreader rolls will be found in connection with a cotton mill at the cylinder or drum drying machine and where it is of the greatest importance that the fabric enters the machine in a perfectly smooth condition.

We will now describe the construction of one of the latest makes of such a spreader roll, and for which reason the accompanying two diagrams are given and of which Fig. 1 shows, partly in perspective, partly in section, the interior construction of such an expander roll. Fig. 2 shows diagrammatically, the application of a series of three of these expander rolls to a cylinder drying machine.

Considering the expander shown, the same in its essence of construction consists of a flexible shaft provided with or without a flexible protective covering and held to an arch formation across the fabric to be treated, the distance between the two ends of the expander being slightly greater than the widest width of fabric. The flexible shaft is composed of coiled wire, the coiling of which is either the same from end to end of the shaft, or one-half of the shaft is of a right-hand coil and the other half of a left-hand coil, so that the shaft may be used with the protective covering for delicately-tinted fabrics and without the said covering for other fabrics.

Referring to our illustrations, a is a curved round bar of about one inch diameter, held at each end to the frame of the machine by clamping-plates, b, on to blocks (not shown) as carried on screws, i. On to bar a is threaded a length of coiled wire, d, of about three-eighths of an inch gauge, the inner diameter of the coils being such as to be an easy fit and allow the coils to readily rotate around the bar.

At each end of the working surface of the expander the coiled wire, d, is held against lateral movement by collars fixed on the bar,

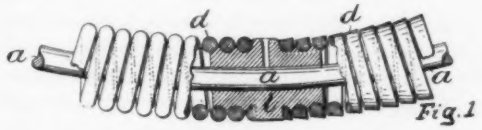


Fig. 1

a, by set-screws. When required to handle delicate colors, a sheath or sleeve of India rubber is fitted over the coiled wire, d, its own contraction or suitable fastening at each end serving to keep the sleeve in position.

In practical work, three of these expander rolls are generally used to work in unison, this being the arrangement shown in connection with diagram Fig. 2. The fabric, F, to be treated is shown to first pass behind the uppermost expander, 1, then in front of

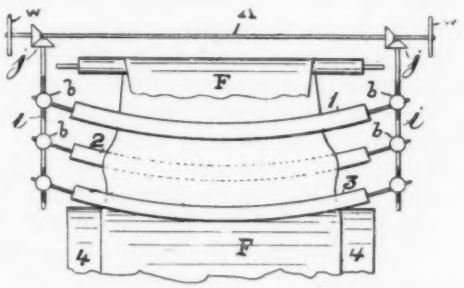


Fig. 2.

the middle expander, 2, then behind the lowermost expander, 3, and finally on to the drying-cylinder, 4. In thus passing over the expanders the fabric is caused to rotate each expander around its curved bar, a, and with every point of its exterior surface to right and left of the centre of its length, rotating in a plane divergent from the plane of every other point and such divergency gradually

increasing toward the ends of the expander, the fabric is gradually opened or spread out from its centre outward in the most effective manner possible.

To increase the bite of the fabric, the expanders, 1 and 3, are adjustable, the blocks to which the clamping plates, b, are fastened, being carried by right and left hand screws, i, so that on rotation of the screws the upper and lower expanders approach or recede from the middle expander and thus increase or decrease the amount of fabric in contact with the surface of the expanders.

To insure even adjustment at both ends, the screws, i, have bevel-wheels, j, connected thereto at their ends, and which in turn mesh with bevels fast on shaft, k, which also carries a hand wheel, w, to permit a quick and reliable adjustment of the three expanders against each other.

When the expander is designed to be always used with a flexible covering, as previously referred to in connection with delicate colors, the coiling of the wire, d, may be the same from end to end of the expander; but when the expander is designed to be used sometimes without and sometimes with the covering, according to goods to be handled, the coils of one-half the length of the expander will then be right-handed and the coils of the other half left-handed, i. e., as shown in our illustration, Fig. 1.

The wire in such cases may be in one piece, but in practice it will usually be in two pieces, joined by a central block, 1, on to the oppositely grooved ends of which the wire is tightly wrapped. At each side of the expander, the coils are then wrapped on to bushes, which, like the block, 1, neatly fit and are free to rotate on the bar, a. In this arrangement, the wire is preferably round, but it may be of a section which produces a stepped formation, as shown at the right hand side of the illustration.

When the unprotected expander is used in series, the convolutions of the intermediate expander are the reverse of those of the other expanders, so that such intermediate expander shall not tend to undo the work of the other expanders.

The cotton acreage of India is estimated at 12 million acres.

THE IMPORTANCE OF PERFECT YARN IN WOOLEN MANUFACTURE.

Certainly the most important item with reference to the proper yarn to use in the manufacture of a given fabric, is the stock from which the yarn in question is to be made, for the fact that you cannot expect to produce the same sort of yarn from coarse and long staple as from fine and short staple wool, neither can you substitute shoddy or cotton or mixed stocks for pure wool; the proper selection of the stock in turn laying the foundation for either good or bad, or perfect or the wrong yarn. The same as in any kind of business, it will be found easier to pronounce a certain sample of yarn, good or bad, i. e., perfect or imperfect, taking into consideration the kind of stock as used in its construction, than to determine in advance what stock should be used for yarn of a required fineness and quality. The fact that the average practical man, whether superintendent or overseer, can decide off hand whether a given sample of yarn is good or poor, considering the material from which it was made, and yet be unable to select the proper stock for good yarn of like quality for a given fabric, has its foundation in that the knowledge that the yarn is or is not what it should be, is based simply upon the fact that in the first case good or poor yarn is the result, from a known stock in question, without going into detail as to the reasons which make such stock O. K. or N. G. for the production of a certain yarn or fabric.

The selection of the proper stock to use certainly will be found comparatively much easier when dealing with all wool goods, i. e., to only secure the right grade wool, than it will be the case if dealing with our lower grades of woolen goods, which form the bulk of consumption, and when he has to decide what wool will best blend with by-products like shoddy or cotton and still give the finished fabric the appearance of being all wool, whereas they actually contain a large percentage of the cheaper fibres. In making selections for such goods, the wool selected must be such as will readily blend with the cheaper fibres, in mixing, picking and the

carding, in order that no excessive waste will be the result, a feature which in turn would greatly offset the usually small margin the manufacturer of these grades of woolens has to work upon; again the wool selected must be of such nature to overcome the tendency of the by-product to destroy the all-wool character of the finished fabric. Here it might be well to mention that the judgment of the best manufacturer or superintendent of the mill is frequently apt to be led astray by his desire to cheapen the cost of the particular fabric under consideration, using in turn a cheaper kind of wool than in turn he will find profitable to use, the waste made or the poor fabric produced greatly cutting down the few cents per pound saved.

However, we must neither lose sight of the character of the by-product used, as a wrong selection in turn may act as hurtful, if not more, than a poor selection of the wool, although the carder may be an expert in his business and his carding engines in the best possible condition all around. For instance, the shoddy used may have been in a place where it has become gummy or be baked dry, or was of a poor kind already when received by the mill. Again the grade of cotton, if such is used, may run lower in some bales than in others, hence the importance of securing an even supply of cotton for the entire season. Such a mistake should never occur in connection with mills financially able to provide their supply of cotton at one time for the entire season, more so on account of its low price if compared with that of the wool. It will be also found well to mix this cotton by itself, ahead of its use, in as large a lot as possible, using the thus prepared cotton then gradually in connection with pickings as required for the card, in turn providing a most even by-product. It is an undisputable fact that either the wool, the shoddy, or the cotton can be damaged in the process of dyeing, by poor machinery, careless handling in the picker room, and when it must be remembered that a lot properly prepared greatly facilitates the process of carding. In many mills the facilities for preparing stock for the card are certainly not up to the standard, whereas in mills where they are on hand, they are frequently not utilized in such a manner as to secure the best results, more particularly will this be found to be the case in mills where looms are continually added in order to increase production of cloth, not taking into consideration to proportionally enlarge the preparatory departments, simply pushing there the work to the utmost, in turn sacrificing quality to production, for example, overloading wool scouring machinery, dryers, the dye-house, the mixing and picker room, etc. Again the machinery used in the preparatory department may have become obsolete or more or less useless from age, constant use or neglect, i. e., incapable of doing good work, even if not pushed for extra large production, and consequently worse when they are forced to turn out a heavy production, with the consequent result of injury, whether good or poor stock is handled.

However, not only the machinery may be at fault, but the trouble may be caused by one or the other preparatory processes being carried on careless or wrong altogether, for example, the scouring liquor in the process of scouring the wool may be either too strong, whereas in other cases not strong enough. The liquor may be kept at too high or too low a temperature, again the water supply may not be of the best.

The process of dyeing, if not carefully carried on, may also lay the foundation for what is best designated a poor yarn, an incompetent, careless workman frequently being at the bottom of lots of trouble in connection with poor yarn in the weave room.

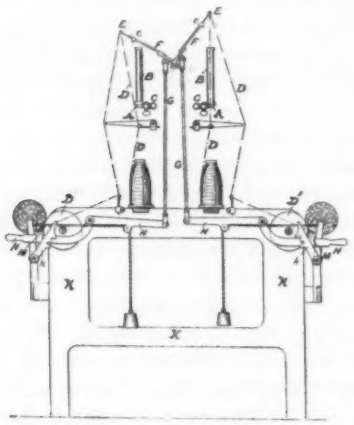
As will be readily understood, the process of mixing and picking, if carelessly carried on, will also provide any amount of trouble in the after processes. If in mixing, the layers are made too thick, and, as a result, are too few in number, and possibly in turn the mixing picker overcrowded and run at too high a speed, an imperfect mixed lot, with all its consequent trouble will be the result. Before closing the article it will be well to mention that with reference to the size of a mixing, always make them as large as possible, and use such large lots afterwards

in two or more lots for picking for the cards, a feature which in turn will greatly assist in producing a most uniform and even supply of yarn.

THE GASSING OF YARNS.

The purpose of this process is to clear the yarn from any ends of fibres protruding from the core of the thread, in turn giving to the yarn a smooth appearance.

The process is done on what is known as gassing machines and of which there are several makes in the market, the object of the present article being to explain by means of



the accompanying illustration one of the latest English improvements to this kind of machinery. The gassing of the yarn in these machines is done by means of bringing the thread near a gas jet of flame for the purpose of removing fine fibres standing off from the surface.

The improvement relates more particularly to machines in which the yarn is treated vertically in a closed chamber, and is designed to provide means for withdrawing or holding the yarn out of the chamber and away from the flame after piecing, or at any other time when the yarn is stationary. For this purpose a vertical tube, B, is mounted around the burner, and through which the yarn is passed in a vertical direction. The burners, A, are mounted upon tubes, C, running longitudinally of the machine. Over each burner is mounted one of these vertical tubes, B, previously referred to, forming a chamber partially closed, up which the flame from the burner, A, projects, and through which the yarn, D, is passed in a vertical direction through the flame during the process of gassing.

The tube, B, is formed with a slot extending longitudinally throughout its length. Above the tubular chamber is mounted a guide eye, E, to direct the thread or yarn, D, through the tube, B, and from it to the winding drum, D'.

The guide eye, E, is carried at the end of a lever, F, pivoted upon a vertical rod, G, by which it is connected with the stop lever, H, of the winding drum, D'.

The balanced lever, F, which carries the guide eye, E, is so balanced or adjusted that in normal position the guide eye, E, is directly above the chamber, B, so as to direct the yarn through without touching it. When, however, the lever, F, falls, or is drawn down, the guide eye is carried some distance in advance of the chamber, B, and the yarn is outside the chamber and away from the gas flame.

The guide, E, is adjustably connected by a short rod, e, with the lever, F, and the lever is pivoted upon the upper end of a vertical rod, G, the connecting rod at its other end being pivoted with a lever handle, H, pivoted to the frame, K, of the machine, and brought out beside the winding drum, where it is held in normal position by a small pivoted catch, H.

A brake plate, M, is attached to the operating handle, to pass between the winding drum and the cheese of yarn, to stop the latter when the yarn is withdrawn from the gassing chamber.

To draw the guide eye forward for piecing purposes, or to hold the yarn out of the flame, and withdraw it from the chamber, B, the catch, H, of the operating handle is released and the guide eye, E, falls forward. On moving the handle back to its normal position, the guide eye is swung up again and the yarn inserted in the gassing chamber through the longitudinal slot.

It is estimated that there are 656 textile establishments of all kinds in Australia, employing 16,611 hands.

THE FINISHING OF COTTON GOODS.

The finishing process of cotton fabrics certainly forms one of the most interesting studies for the textile student. One of the first objects for him to master is how to test the various finishes of cotton goods. By examining its external or physical properties a practical eye can at once detect if the fabric in question has been only calendered, or if starched on the back only, or on both sides, i. e., through the structure. By using a strong microscope, it will be readily ascertained whether the finish lies only on the face of the fabric or has penetrated the body of the cloth, also if mineral substances have been used in connection with the finishing.

Samples should be examined to ascertain whether the cloth was lustred, calendered or sized on one or both sides; examining a fabric against the light at once revealing whether it has been starched or not, and how. If the fabric in question was heavily sized, it is hard to the feel, becoming, however, softer by rubbing it between the fingers, and if a sizing for heavy weighting has been used, a lot of dust flies out when tearing the sample, thus indicating to a certain extent the weighted finish, since the more dust, the heavier the weighting.

To ascertain the amount of finish in the cloth, weigh the sample carefully on a pair of accurate scales, and then wash it in distilled water, containing malt, then dry it and weigh it again, the difference in weight telling you the amount of starch, dextrine, etc., there was in the sample, and from which figures the percentage of finish added to the fabric can be readily ascertained.

For example:

First weight to be	8	grains
Second weight o be ...	7¼	grains
Loss	¾	grains

and 8 : 7¼ : : 100 : x.

7¼ × 100 ÷ 8 = 90⅝, and

100 — 90⅝ = 9⅜%, amount of finish in the sample in question.

In some instances it is necessary to ascertain the amount of moisture in a sample, and which is done by carefully weighing said sample and after recording this weight, drying it in a stove for some time until there can be no further loss of weight, after which each sample is again weighed, and the latter weight subtracted from the first, the difference then indicating the amount of moisture in sample before it was tested, and from which answer it then will be easy, by means of proportion, to ascertain the percentage of moisture in the sample tested. Although this test and calculation will not show us the kind of finish, yet it is better to make it, since cellulose by itself is less hygrometric than starches, thus if there if a great percentage of moisture present, it is a sure sign of the cloth being heavily starched.

To ascertain exactly how much foreign matter a fabric contains, treat as large a sample of the fabric under discussion, as can be conveniently handled, after first weighing it, with distilled water, containing malt; let it diaggregate, then wash, dry and weigh it. With this experiment the difference in the two weighings indicates the quantity of foreign substances deposited on the fabric; however there may be certain insoluble soaps (softeners) still in the fabric, and for which reason the sample must then be boiled in a weak acid solution in order to remove any fatty substances still adhering to the structure. After this boil, dry sample, weigh again and subtract this weight from the first weighing, the difference between both weighings being the amount of dry finishing matter in the sample and from which, by following calculation given before, it will be easy to ascertain the percentage.

However, we must also remember that when testing printed or dyed goods, all colors are more or less attacked by acids.

The next procedure will be to ascertain the constituents used for starching, weighting or finishing and for which treat with boiling water for a few hours, which will remove the feculae, starches, thickenings, gums, soluble salts, alum, sulphates, chlorides, etc., as well as all mineral or earthy matters, after which, by means of filtering, separate the soluble from the insoluble substances. In order to ascertain the nature of those soluble substances, evaporate part of the liquid, treat a few drops

with tincture of iodine, which will reveal starchy substances by turning blue. If no starch present, concentrate the whole solution, adding two or three times its volume of alcohol and when glue, dextrine and gum are precipitated. A tannin solution in turn will reveal the presence of gelatin by precipitating the same.

In order to distinguish gum from dextrine use the polariscope, and when dextrine is diverted to the right, gum to the left. The mixture of the two can be sufficiently indicated by basic acetate of lead, which when cold will precipitate gum but not dextrine, whereas when warm, both. If no precipitation is obtained, but an organic substance still shown by the incineration on the platinum blade, then this indicates the presence of mosses, lichens, etc. Sugar is found by Fehling's liquor, before and after interversion; add to the tolerably concentrated aqueous liquor a few cubic centimetres of pure hydrochloric acid, ordinary concentration, warm in water bath in an apparatus with reflux refrigerator and treat with copper solution. If desired to more closely examine the soluble mineral substances, employ the usual methods of analytical chemistry.

China clay or any other matter as was used for weighting purposes in the sample, will be found in the residue insoluble in water, alabaster, gypsum and talc or French chalk, provided such should have been used, in the weighting compound, being also found in this residue.

Resin is detected by boiling the sample of cloth with carbonate of soda, which will dissolve it, its presence then being shown by the precipitate of sylvic acid as is obtained from the liquor when treated by an acid. Other fatty substances do not give any precipitate, but an oily fluid which swims on the surface of the liquor.

Glycerine, if present, will be also found in the watery solution and is detected, after evaporation, by treating with sulphate of potash.

To ascertain the quantity of fatty matters used in a finishing compound, dissolve the latter by means of ether, and when after evaporation the weight of the residue expresses the quantity of fatty matter. By treating this residue with boiling water we then can ascertain if any soluble substances are in the water.

It certainly will be next to impossible to ascertain the exact proportions of the various substances as have been used in finishing a certain fabric submitted for analysis; however, having obtained the nature of the substances used, and obtained a fair idea of about the proportions of each used, it then will be an easy matter for the practical finisher to judge what substances to use on his part and the proper proportions of each, in order to duplicate said finish.

Years ago some cotton mills adopted the use of paraffine in connection with sizing the warps in order to improve their weaving qualities, a feature which, however, gave rise to lots of trouble; first the gray goods showed mildew spots, for the fact that the paraffine used in sizing the warp remained in the size in the form of an emulsion, and when the warp was saturated with this sizing material, although the moisture penetrates the same, the paraffine will remain on the outside. When in turn drying the yarn on cylinder or tentering drying machines, the moisture cannot get out on account of the paraffine acting as a coating. The warp, although appearing dry to the general handle, contains the moisture in its body, and which in a short time will be the means of mildew to the goods.

Another disadvantage to the use of paraffine for warp sizing purposes is the fact that it will not readily dissolve in connection with the chemicals used in the bleaching process.

If testing for paraffine, either in yarn or fabrics, we may keep in mind that the same is insoluble in water, but soluble, to a considerable extent, in boiling alcohol, ether, turpentine, olive oil, benzol, chloroform and sulphide of carbon. However, acids, alkalies and chlorine do not act upon it in an ordinary temperature, and for which reason said sizing cannot be properly removed from cotton fabrics in which paraffine was used in connection with warp sizing, the result being spoiled goods to the manufacturer.

This sizing will also make trouble to the dyer, resulting in uneven colors, since in the boiling off process he simply spreads the

paraffine on to the fabric, and wherever it remains, spots of a lighter shade will occur, for the fact that the dye liquor could not penetrate properly through these paraffine spots.

These disadvantages to the finishing of cotton goods certainly have compelled manufacturers to discard the use of paraffine as a sizing material for warps, and wherever it should be introduced under a new name, in a new warp sizing compound, it cannot help but lead to lots of trouble in the mill.

The water as used in the finishing process, i. e., at the disposal of the finisher, is also of the greatest of importance, although some manufacturers may think that water plays no part in the process of finishing; however it does exercise some influence on the operation, and consequently affects the final result. This is readily proven by the fact that finishers who have been successful in one mill, built up a reputation for their work, when changing to another mill have been unsuccessful, although using the same materials and similar machines, and when certainly the water they had to contend with, and to which very likely they paid no attention, may have been a great deal at the bottom of the trouble.

Certainly if the water used in every mill was pure, no trouble would exist, a feature which, however, is impossible, since all natural waters contain substances in solution, mineral or organic, more or less of one than the other according to the soil traversed by the river, and impurities finding their way to the river. Substances which in this way the water may contain are sodium sulphate, potassium chloride, and other alkaline salts, calcium carbonate, and sulphate, iron oxide, magnesium carbonate, sulphate, chloride and silica, with vegetable and animal organic matters. The character of the impurities present depends on the character of the soil from which the water comes; if, for example, limestone rocks prevail, the waters are then highly charged with calcium carbonate and sulphate; again if there is much sandstone, the water will contain the same ingredients with a little silica iron and alkaline salts. If again the water comes from granite and slate districts, the impurities then found are mainly of an alkaline character.

In the same manner as the constituents of water with reference to rivers coming from different districts varies, in a similar manner, on a smaller scale, two waters from closely adjoining districts may vary.

A knowledge of the constituents of a water to be used for finishing purposes is required by the finisher not only on account of its influence as water, but also on account of the matters it contains on the finishing of the cloths, as well as the influence of the impurities present in it on the materials used in finishing.

Water penetrates into pores of the cotton fibre, in turn causing it to swell and become more porous and better adapted to absorb finishing agents. The fibres by thus opening out have a fair chance for shrinking, a feature every finisher had to guard against in order to bring up the fabrics in proper width, length and appearance.

To overcome this trouble, the cloth is kept under tension while passing through the various finishing machinery, said tendency to shrink being greater when dealing with hot water than with cold water. This tendency of the fibre to shrink is taken advantage of in connection with some finishers, and when the cloth is then run through hot water in order to produce what is known as "shrunk finishes," taking then in consideration not to put too much tension on the goods, in order to permit their shrinking.

It must be remembered that when cloth passes through water, it takes up some of the latter, and will under ordinary conditions absorb fully its own weight of water. In the process of drying, certainly the water will evaporate, but not the impurities it contains in solution, they will remain behind, and in turn be deposited on the cloth. This will explain that cloth is rendered stiffer and harsher to the feel, much more so if using hard water, i.e., water containing lots of impurities, than if purer water was used, and for which reason, for soft finishes, as pure a water as possible to obtain must be used. The proper supply, i.e., kind of water to use,

for this reason forms one of the most important items when intending to build a finishing plant.

With reference to the impurities in water upon the materials used in the finishing process, as tallow, wax, soap, oil, chlorides of calcium, magnesium and zinc, starch, flour, glycerine, glucose, etc., as a rule, if present in small, i.e., average quantities, said impurities have no action whatever on these finishing materials, with the possible exception of soap and oil.

Soap is a compound of fatty matter and alkali, the value of any soap depending upon the amount and correct proportions of fatty acid and alkali. The fatty acid is determined by weighing 50 grains of the soap, and boiling it in a beaker, in distilled water, till dissolved, then adding 10 grains of solid paraffine, and then 0.6103 cubic inch of sulphuric acid, diluted in a little water. The whole is gently boiled until the liquid clears, and the oily matters completely rises. It is then set aside until quite cold, so that the fatty acid can be removed in a cake, then dried upon blotting paper, and weighed.

The weight, from which the paraffine added must be deducted, gives the fatty acid, the double of which, if 50 grains of soap had been taken, is the percentage. A very simple test sufficing to show whether uncombined alkali is present is thus: Pour on to the soap a small quantity of an alcoholic solution of phenol phthalein, when the production of a red color indicates that free alkali exists.

For this reason it is of the greatest of importance to have good, soft water; for if it is hard, the iron, calcium and magnesium salts in such a hard water precipitate the soap used as sticky, insoluble soaps of these elements, and when these are once formed on the fibre they are very difficult to remove.

Provided hard water is the only one at our disposal, it must be first softened by the addition of a strong solution of granulated carbonate of soda, and then make up your soap as usual. The amount of material required to be added depends on the hardness of the water. A chemist determines the degree of hardness of water by the amount of soap the water will destroy. An alcoholic solution of soap is dropped carefully into a measured amount of distilled water containing a known amount of a lime salt. The value of a cubic centimeter being determined, the soap solution is dropped from the graduated tube into a measured amount of water to be tested, and when a permanent lather is produced by shaking, the amount of soap solution is noted and the hardness of the water calculated. One grain of granulated carbonate soda will precipitate about one and a half grains of sulphate of lime (soluble in water) as carbonate of lime (insoluble in water.)

Nearly all water contains some lime, and may have as much as fifty grains to the gallon. It is, therefore, necessary to experiment with the water to be used, and discover the amount of granulated carbonate soda required to precipitate the dissolved salts of lime and magnesia. To test for the presence of lime and magnesia, fill a clean tumbler with hot water and add a few drops of a strong solution of granulated carbonate soda. A milky appearance followed by a white precipitate shows their presence. If water contains 5 grains of lime and magnesia to the gallon, every 1,000 gallons will destroy over 10 pounds of neutral soap, and if 10,000 gallons are used in a day, 100 pounds of soap will have been used to kill the mineral salts, when 5 1/4 pounds of granulated carbonate soda would have done the same work and with no dangerous scum.

There is another point worth considering, viz: these curdy masses of lime or magnesia soap, when they get on the cloth, give it a greasy feel, or sometimes if they are not deposited evenly, a spotty effect.

From explanation given, it will be readily seen that a hard water is a costly one to any finishing plant, because the finisher is compelled to use more soap with such, than with a soft water. Soluble oils and oleines, also preparations containing fatty matters and an alkali, give practically the same results as soaps.

If compelled by force of circumstances to use hard waters, have a large tank of known capacity provided with a steampipe to bring the water to a boil, add the proper amount

of granulated carbonate soda necessary to precipitate the lime and magnesia, and allow to settle, and then draw the water from the tank several inches above the bottom.

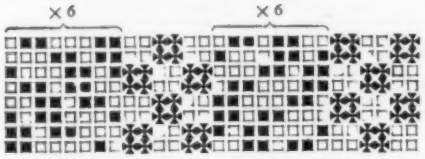
When using Glauber's salt, nitre cake, soda crystals, pearl ash, etc., in the preparation of the finishing sizes, these, on account of reacting with the lime in the water, cause the formation of the sulphate or carbonate of lime, as the case may be, a feature which takes away from the crispness of feel of the cloth, while the lime tends to make the cloths somewhat powdery, compelling the finisher in such cases to use rather more of these substances in order to produce a desired effect to the cloth under operation, than when soft water is at his disposal.

Hard waters are of less disadvantage to the finisher when dealing with cloth requiring hard and heavy finishes and where much barytes and minerals are used; for whatever the tendency of such hard waters, it is in the line of finish required; it being the soft finish where hard water acts hurtful, and a pure, i.e., soft water the one desirable.

(To be continued.)

FOREIGN NOVELTIES.

Worsted Trousering.



Complete Weave. Repeat 108×8.

Warp—4864 ends, 12 or 14 harness, fancy draw.

Reed—19×4=64 inches wide in loom.

Dress—

1 end, 2/28s worsted, dark blue	× 12 = 24 ends
1 end, 2/28s worsted, black	
2 ends, 2/28s worsted, dark blue	× 6 = 24 ends
2 ends, 2/28s worsted, black	
1 end, 2/28s worsted, black	= 1 end
2 ends, 2/28s worsted, dark blue	= 2 ends
1 end, 2/28s worsted, crimson	= 1 end
1 end, 2/28s worsted, black	= 1 end
1 end, 2/28s worsted, dark blue	= 1 end
Repeat of pattern:	54 ends

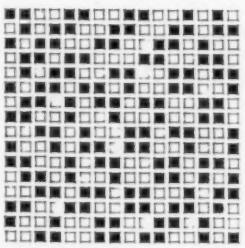
Filling—64 picks per inch, arranged thus:

2 picks, 2/28s worsted, blue.
2 picks, 2/28s worsted, black.

4 picks, repeat of pattern.

Finish—Worsted finish, 56 inches wide.

Woolen Cheviot Suiting.



Complete Weave.
Repeat 16×16.

Warp—1736 ends, 16 harness, straight draw.

Reed—14×2=62 inches wide in loom.

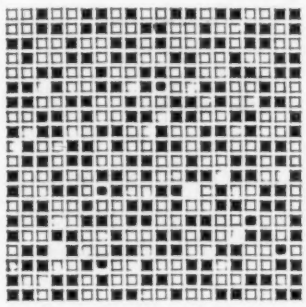
Dress—

2 ends, 10 cut cheviot woolen yarn, black / 2 ends, 10 cut cheviot woolen yarn, claret	× 2 = 8 ends
1 end, 2 ply, 18 cut woolen twist, black and crimson	= 1 end
1 end, 10 cut cheviot woolen yarn, claret	= 1 end
2 ends, 10 cut cheviot woolen yarn, black / 2 ends, 10 cut cheviot woolen yarn, claret	× 2 = 8 ends
1 end, 2 ply, 18 cut woolen twist, black and crimson	= 1 end
1 end, 10 cut cheviot woolen yarn, claret	= 1 end
2 ends, 10 cut cheviot woolen yarn, black	= 2 ends
2 ends, 10 cut cheviot woolen yarn, claret	= 2 ends
3 ends, 10 cut cheviot woolen yarn, black	= 2 ends
4 ends, 10 cut cheviot woolen yarn, claret	= 4 ends
3 ends, 10 cut cheviot woolen yarn, black	= 3 ends
3 ends, 10 cut cheviot woolen yarn, claret	= 3 ends
4 ends, 10 cut cheviot woolen yarn, black	= 4 ends
3 ends, 10 cut cheviot woolen yarn, claret	= 3 ends
Repeat of pattern:	44 ends

Filling—26 picks per inch, same as warp, (check).

Finish—Cheviot finish, 54 inches wide.

Fancy Cassimere.



Complete Weave.
Repeat 20×20.

Warp—3120 ends, 20 harness, straight draw.

Reed—10×4=72 inches wide in loom.

Dress—

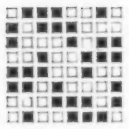
4 ends, 3 1/4 run, dark slate.
4 ends, 3 1/4 run, light slate.
4 ends, 3 1/4 run, dark slate.
3 ends, 3 1/4 run, light slate.
2 ends, 3 1/4 run, crimson.
3 ends, 3 1/4 run, light slate.
4 ends, 3 1/4 run, dark slate.
4 ends, 3 1/4 run, light slate.
4 ends, 3 1/4 run, dark slate.
3 ends, 3 1/4 run, light slate.
2 ends, 3 1/4 run, crimson.
3 ends, 3 1/4 run, light slate.

40 ends, repeat of pattern.

Filling—44 picks per inch, same counts of yarn and arrangement of colors as warp.

Finish—56 inches wide, velour finish.

Worsted Granite.



Complete Weave.
Repeat 8×8.

Warp—3328 ends, 16 harness, straight draw.

Reed—13×4=64 inches wide in loom.

Dress—

1 end, 2/60s worsted, light	× 24 = 48 ends
1 end, 2/60s worsted, dark	
1 end, 2/60s worsted, dark	× 12 = 24 ends
1 end, 2/60s worsted, light	
1 end, 2/60s worsted, bright	= 1 end
1 end, 2/60s worsted, light	= 1 end
1 end, 2/60s worsted, dark	× 11 = 22 ends
1 end, 2/60s worsted, light	
1 end, 2/60s worsted, light	× 24 = 48 ends
1 end, 2/60s worsted, dark	
1 end, 2/60s worsted, dark	× 24 = 48 ends
1 end, 2/60s worsted, light	
1 end, 2/60s worsted, light	× 11 = 22 ends
1 end, 2/60s worsted, dark	
1 end, 2/60s worsted, light	= 1 end
1 end, 2/60s worsted, bright	= 1 end
1 end, 2/60s worsted, light	× 12 = 24 ends
1 end, 2/60s worsted, dark	
1 end, 2/60s worsted, dark	× 24 = 48 ends
1 end, 2/60s worsted, light	

Repeat of pattern: 288 ends

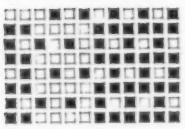
Filling—55 picks per inch, arranged thus:

2 picks, 2/32s worsted, dark	× 21 = 168 picks
1 pick, 2/32s worsted, light	
3 picks, 2/32s worsted, dark	
2 picks, 2/32s worsted, light	
2 picks, 2/32s worsted, dark	= 2 picks
1 pick, 2/32s worsted, light	= 1 pick
2 picks, 2/32s worsted, dark	= 2 picks
1 pick, 2/60s worsted, bright	= 1 pick
2 picks, 2/32s worsted, light	= 2 picks

Repeat of pattern: 176 picks

Finish—Worsted finish; 56 inches wide.

Worsted Trousering.



Complete Weave. Repeat 12×4.

Warp—4104 ends, 12 harness, fancy draw.

Reed—16×4=64 inches wide in loom.

Dress—

1 end, silk, white.
3 ends, 2/40s worsted, black.
1 end, 2/40s worsted, light blue.
2 ends, 2/40s worsted, black.
1 end, silk, white.
8 ends, 2/40s worsted, black.
1 end, 2/40s worsted, light blue.
4 ends, 2/40s worsted, black.
1 end, silk, white.
6 ends, 2/40s worsted, black.
1 end, 2/40s worsted, light blue.
7 ends, 2/40s worsted, black.

36 ends, repeat of pattern.

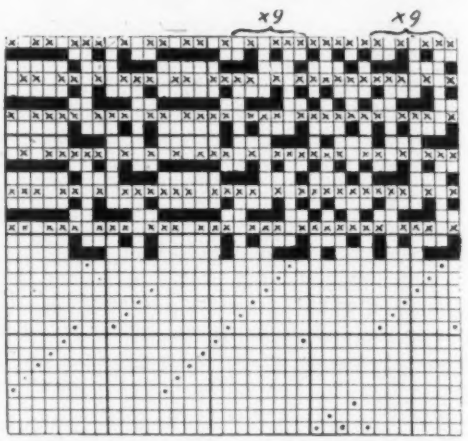
Filling—104 picks per inch, arranged thus:

1 pick, 2/60s worsted, black.
1 pick, 2/20s worsted, coffee brown.

2 picks, repeat of pattern.

Finish—Worsted finish, 56 inches wide.

Worsted Suiting (Stripe effect.)



Repeat 154×6.

Warp—4004 ends, 12 harness, fancy draw (see ⊡ type below weave.

Reed—20× { 1 dent @ 4 ends / 50 dents @ 3 ends } =66¾ " wide in loom.

Dress—

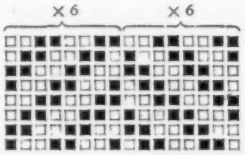
2 ends, 2/60s worsted, black and yellow shade of green	= 2 ends
3 ends, 2/24s worsted, black	= 3 ends
1 end, 2/40s worsted, light gray and black twist over with 1/40s black	= 1 end
1 end, 2/24s worsted, black	= 1 end
1 end, 2/40s worsted, light gray and black, twisted over with 1/40s black	= 1 end
3 ends, 2/24s worsted, black	= 3 ends
2 ends, 2/60s worsted, black and yellow shade of green	= 2 ends
59 ends, 2/24s worsted, black	= 59 ends
2 ends, 2/60s worsted, blue and black	
3 ends, 2/24s worsted, black	
1 end, 2/40s worsted, light gray and black, twisted over with 1/40s black	× 2 = 32 ends
1 end, 2/24s worsted, black	
1 end, 2/40s worsted, light gray and black twisted over with 1/40s black	
3 ends, 2/24s worsted, black	
2 ends, 2/60s worsted, blue and black	= 2 ends
58 ends, 2/24s worsted, black	= 58 ends

Repeat of pattern: 154 ends

Filling—All plain 2/22s worsted, black.

Finish—Worsted finish, 56 inches wide.

Worsted Trousering.



Complete Weave.
Repeat 96×4.

Warp—2300 ends, 4 or 8 harness, fancy draw.

Reed—9×4=64 inches wide in loom.

Dress—

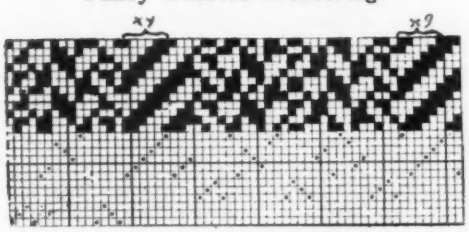
5 ends, 2/14s worsted, brown
4 ends, 2/14s worsted, black.
5 ends, 2/14s worsted, brown.
2 ends, 2/14s worsted, black.
5 ends, 2/14s worsted, brown.
3 ends, 2/14s worsted, black.
1 end, 2/36s worsted, red.
5 ends, 2/14s worsted, brown.
2 ends, 2/14s worsted, black.
5 ends, 2/14s worsted, brown.
4 ends, 2/14s worsted, black.
5 ends, 2/14s worsted, brown.
2 ends, 2/14s worsted, black.

48 ends, repeat of pattern.

Filling—38 picks per inch, 2/14s worsted, all black.

Finish—Worsted finish, 56 inches wide.

Fancy Worsted Trousering.



Complete Weave. Repeat 132×18.

Warp—8052 ends, 14 harness, fancy draw (as given below weave,) see ⊡ type.

Reed—21×6=63½ inches wide.

Dress—

7 ends, 2/60s worsted, black.
4 ends, 2/60s worsted, gray mix.
6 ends, 2/60s worsted, black.
45 ends, 2/60s worsted, black and light gray.
7 ends, 2/60s worsted, black.
1 end, 3/32s worsted, black, (cord effect.)
2 ends, 2/60s worsted, black.
5 ends, 2/60s worsted, gray mix.
2 ends, 2/60s worsted, black.
1 end, 3/32s worsted, black. (cord effect.)
7 ends, 2/60s worsted, black.
45 ends, 2/60s worsted, black and light gray.

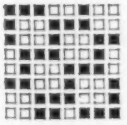
132 ends, repeat of pattern.

Filling—78 picks per inch, arranged thus:

2 picks, 2/60s worsted, black (Face, see ■ type.)
1 pick, 3¼ run woolen yarn, (Back, see ⊠ type.)

Finish—Worsted finish, 56 inches wide.

Worsted Granite.



Complete Weave.
Repeat 8×8.

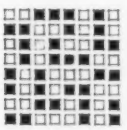
Warp—3696 ends, 16 harness, straight draw, 2/32s worsted, dark shade.

Reed—14×4=66 inches wide in loom.

Filling—60 picks per inch, 2/32s worsted, dark shade.

Finish—Worsted finish, 56 inches wide.

Worsted Suiting.



Complete Weave.
Repeat 8×8.

Warp—3712 ends, 16 harness, straight draw.

Reed—14½×4=64 inches wide in loom.

Dress—

3 ends, 2/32s worsted, light
2 ends, 2/32s worsted, medium
3 ends, 2/32s worsted, light
} × 6= 48 ends

2 ends, 2/32s worsted, light
1 end, 2/32s worsted, medium
2 ends, 2/32s worsted, light
1 end, 2/32s worsted, medium
2 ends, 2/32s worsted, light
} × 6= 48 ends

Repeat of pattern: 96 ends

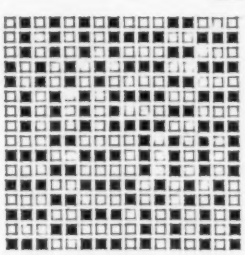
Filling—60 picks per inch, arranged thus:

4 picks, 2/32s worsted, dark.
1 pick, 2/32s worsted, light.
2 picks, 2/32s worsted, dark.
1 pick, 2/32s worsted, light.

8 picks, repeat of pattern.

Finish—Worsted finish; 56 inches wide.

Worsted Suiting.



Complete Weave.
Repeat 16×16.

Warp—6336 ends, 16 harness, straight draw.

Reed—16½×6=64 inches wide in loom.

Dress—

1 end, 2/58s worsted, light
1 end, 2/58s worsted, dark
} × 4= 8 ends

1 end, 2/58s worsted, dark
1 end, 2/58s worsted, light
} × 8= 16 ends

} × 3= 72 ends

1 end, 2/58s worsted, light
1 end, 2/58s worsted, light and dark
} × 4= 8 ends

1 end, 2/58s worsted, dark
1 end, 2/58s worsted, light
} × 8= 16 ends

} × 2× 48 ends

1 end, 2/58s worsted, light and dark
} × 4= 8 ends

1 end, silk, light
1 end, 2/58s worsted, dark
} × 8= 16 ends

1 end, 2/58s worsted, light
} × 4= 8 ends

1 end, 2/58s worsted, light
1 end, 2/588 worsted, light and dark
} × 2= 48 ends

1 end, 2/58s worsted, dark
1 end, 2/58s worsted, light.
} × 8= 16 ends

Repeat of pattern: 192 ends

Filling—92 picks per inch, same arrangement counts and colors as per warp.

Finish—Worsted finish; 56 inches wide.

THE WESTCOTT AND POTTER SLIVER DRAWING MACHINE.

The novelty of this machine over railway heads or drawing frames as now in use, consists in subjecting the slivers, as fed to it, previous to their entering the regular set of the three pairs of drawing rolls of the machine, to the action of an evener roll, and when the least appreciable variation in the thickness of the slivers as fed to the machine, operates through suitable lever, disk, friction wheel, etc.,—connections, to at once automatically increase or decrease (as the case may call for) the speed of the back drawing rolls, consequently delivering always a uniform quantity of sliver to the positive driven front drawing rolls and the calender rolls.

This feature of thus feeding a positive uniform supply of roving to the drawing, i.e., drafting rolls of the machine, in turn gives the builders of the new machine, the Kip-Armstrong Co., of Pawtucket, R. I., the opportunity of requiring in connection with their system of drawing, less process-drawing and what in turn, in connection with a given amount of drawing to be done in a stated time, means less machinery required by the mill, less floor space, less help, less wages; one process of the Westcott & Potter drawing to take the place of the three-process system at present in use.

Having thus referred to the principle underlying the construction of the new drawing machine "feeding only an automatically regulated positively even amount of roving to a set of positively driven front drawing rollers," on account of the importance as well as novelty of the new drawing machine to a great many of our readers, we will now give a description of the new evener mechanism as used in connection with this one-process system of drawing, accompanied by three illustrations, in order to be able to more clearly acquaint manufacturers and their overseers with the construction and operation of the new machine, and of which Fig. 1 is a plan view, Fig. 2 a corresponding side elevation and Fig. 3 an end elevation in partial transverse section, of the new drawing frame, either illustration only showing the main features of the new machine, minor details, driving mechanisms, etc., being omitted for clearness sake of illustrations, as well as being of no special importance.

Numerals of reference 1, 2 and 3 indicate respectively the set of 3 pairs of drawing or drafting rolls and of which the front drawing rolls, 3, as well as the pair of calender rolls, 4, of the machine are driven by means of usual gearing as done in connection with regular drawing frames, at a uniform speed by shaft, 5, through pulley, 6, by means of belt, 7; the calender rolls, 4, being driven from the front roll shaft through a train of gears, 8, 9 and 10; a continuation of the train in turn driving the coiler shaft, coiler and coiler can-stand in a similar manner as is done in connection with our common drawing frames. Drawing rolls, 1, 2 and 3, driving shaft, 5, as well as the new evener roll, 11 (which will be explained in detail later on) are mounted in suitable bearings secured to a base or table, 12, of the machine.

THE SLIVER EVENING DEVICE.

To the end of the front roll shaft, 5, is secured a driving disk, 13, which in turn through an interposed friction wheel, 14, drives the oppositely placed friction disk, 15, as is fast to an endwise movable shaft, 16, which is revolvingly mounted in the two bearings, 17, respectively.

The middle and back drafting rolls, 2, and, 1, as well as the evener roll, 11, in turn are driven by train of gears, 18, 19 and 20, connected therewith and with the endwise movable, i. e., variably driven shaft, 16.

In order to control the desired frictional contact between friction wheel, 14, and friction disks, 13 and 15, the endwise movable shaft, 16, is provided with a thrust-bearing, having anti-friction-balls, 21, a screw-threaded portion, 22, with movably fitted nut, 23, thereto, as well as a helical spring, 24, placed around said shaft, 16, between nut, 23, and the thrust bearing.

From explanations thus far given, it will be seen that the front drawing-rolls, 3, the calender roll, 4, and the driving disk, 13, are driven at a positive and uniform speed from front roll shaft, 5, the other parts of the mechanism thus far referred to depending for their r. p. m. upon the relative position of

friction wheel, 14, between the driving disk, 13, and the driven disk, 15, i.e., that if the axis of wheel, 14, is moved toward the uniformly driven shaft, 5, the speed of the driven disk, 15 (and consequently shafts, gears, rolls, etc., driven by it) is reduced, the opposite being the case when the axis of wheel, 14, is moved away from shaft, 5, and toward the variably driven shaft, 16. This principle of being able to vary the speed of the back and middle drawing rolls, 1 and 2, respectively, as compared to the uniform speed of the front drawing rolls, 3, is made use of any time the proper counts, i.e., normal thickness of the sliver, as fed to the machine, varies, the mechanism for effecting the change in connection with drive thus far explained being the evener roll, 11, and its auxiliary parts thus far not yet referred to.

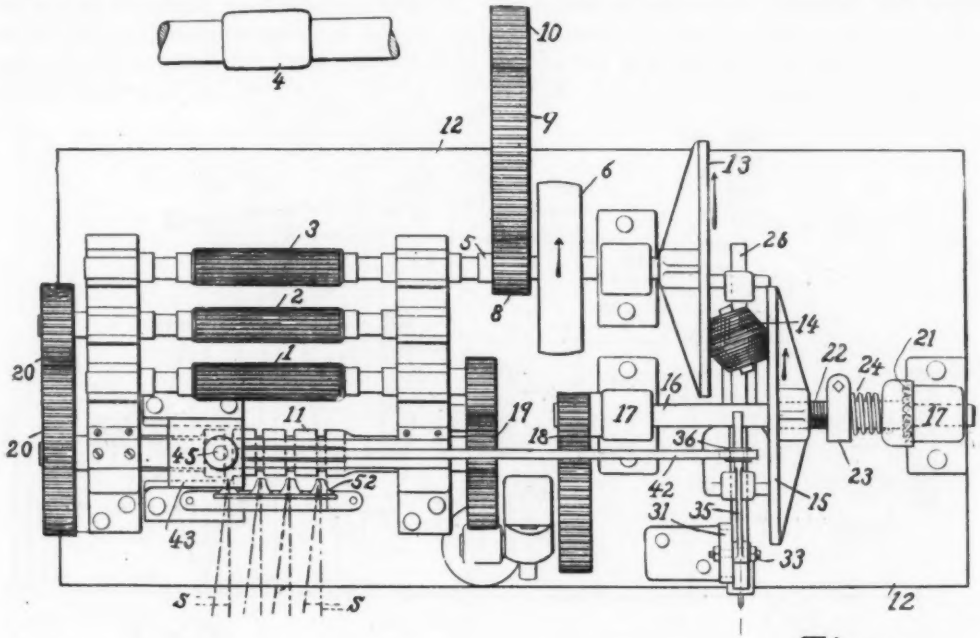


Fig. 1

THE MEANS FOR VARYING THE SPEED OF THE BACK DRAWING ROLLS ACCORDING TO COUNTS OF SLIVER FED.

It will be readily understood that provided the sliver comes heavy, the speed of the back and middle set of drawing rolls, 1 and 2, respectively, must be correspondingly reduced, the reverse to take place provided the sliver comes light, so that always the proper amount of sliver is fed to the uniformly driven set of front drawing rolls, 3. To accomplish this result, friction wheel, 14, is revolubly mounted in a yoke, 25, adjustably secured to an endwise-movable horizontal rod, 26, supported in fixed bearings, 27, the rear end portion, 27, of the rod being slotted longitudinally at 28 and carries a roll, 29, and counterweight, 30. Contiguous to the rear end of the rod is secured a standard, 31, its upper end being slotted-in, 32, to receive a pin, 33, on which is pivoted the bell-crank lever, 34-35, the lower end, 34, of which is yoked to receive roll, 29, previously referred to, whereas its horizontal arm, 35, is provided with a small slidable flanged wheel, 36. From details thus given, it will be seen that if vibrating, i.e., raising or lowering, the horizontal arm, 35, of the bell-crank lever, its vertical arm, 34, will simultaneously move the rod, 26, and consequently also the friction-wheel, 14, forward or backward as the said arm is raised above or depressed below the horizontal or normal position. The distance

thus traversed by the wheel, 14, corresponds to the ratio of the two members, 34 and 35, of the bell-crank lever.

THE EVENER ROLL AND ITS EQUALIZING MEANS.

The evener roll is indicated in our illustrations by numeral of reference, 11, and as previously referred to is located in advance of the set of back drawing rolls, 1, of the machine. The purpose of this evener roll is to transmit by suitable equalizing means, to be later on explained in detail, any variations of the counts of slivers, S, as delivered to the machine to the bell-crank lever, 34-35, and in turn through mechanism previously described to the friction wheel, 14.

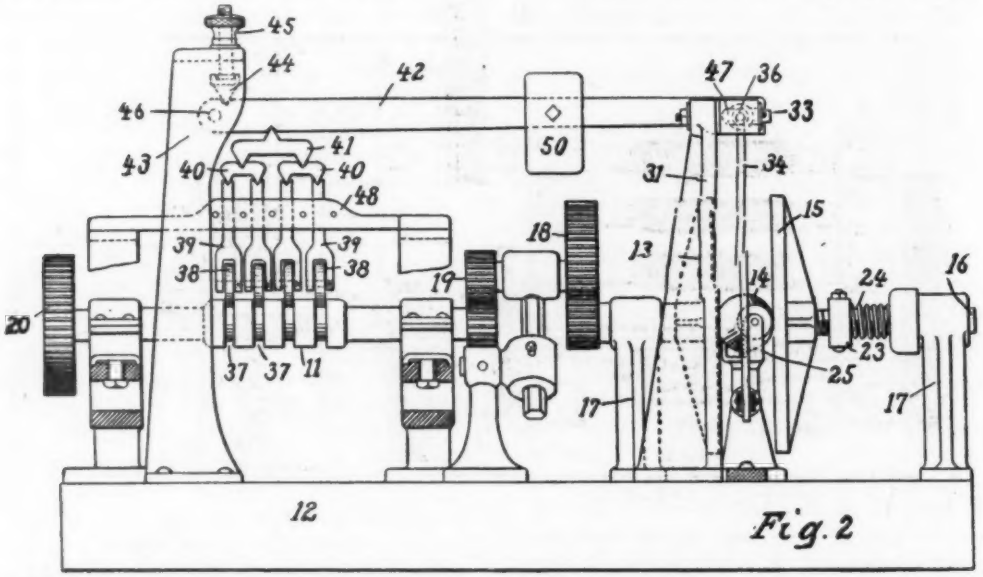


Fig. 2

The evener roll is provided with a series of concentric peripheral grooves, 37, adapted to receive the several slivers, S. In each of these grooves a disk, 38, i.e., detector, is made to revolve, each disk being independently mounted in a light and vertically movable yoke, 39, all these yokes, four in this case, being made to act after the principle of what is known as the "Lord piano feed" (named after its inventor, the prominent builder of cotton machinery in England) by means of small knife edged saddles, 40 (two in this instance), upon a similar shaped but somewhat larger saddle, 41, which in turn with its upper knife edge engages with the under side of the horizontal equalizing lever, 42, thus forming a live fulcrum for the latter. This lever extends into the upper end of a hollow standard, 43, secured to the base or table, 12; lever, 42, being pivoted to said standard, 43 at 44, a screw and nut, 45, being employed for effecting an accurate adjustment of the parts, lever, 42, being kept in position laterally by means of integral lugs, 46. The outer end, 47, of the lever is slotted to receive the flanged wheel, 36, of the bell-crank lever, 34-35. In order to keep the saddle members, 40 and 41, in proper working position, yokes, 39, are guided in their vertical movement by passing midways through a grate, 48, having upwardly extending cheeks, 49, secured to it. 50 is a balance weight for lever, 42.

From description thus far given, it will be seen that after the new sliver evening mechanism has been once adjusted for a certain count, i.e., dimension of sliver, S, to be fed, any variations in its counts will be at once detected as soon as the sliver, after passing tension roll, 51, enters between one of the grooved portions, 37, of the evener roll and the detector, i.e., its mate disk, 38; and in turn greatly multiplied through the medium of compound levers explained, with the result that in turn the position of the axis of

rotation of friction wheel, 14, is changed, in turn, as the case may be, running friction disk, 15, and consequently also evener roll, 11, and back and middle set of drawing rolls, 1 and 2, either slower or faster as compared to the uniformly driven front set of drawing rolls, 3, and the set of calender rolls, 4, i.e., automatically slackening at once the speed of rolls, 11, 1 and 2, provided the sliver comes heavy, vice versa, running said three sets of rolls at once faster, provided the sliver comes lighter than its normal size, in turn delivering always a practical uniform amount of sliver to the coiler can.

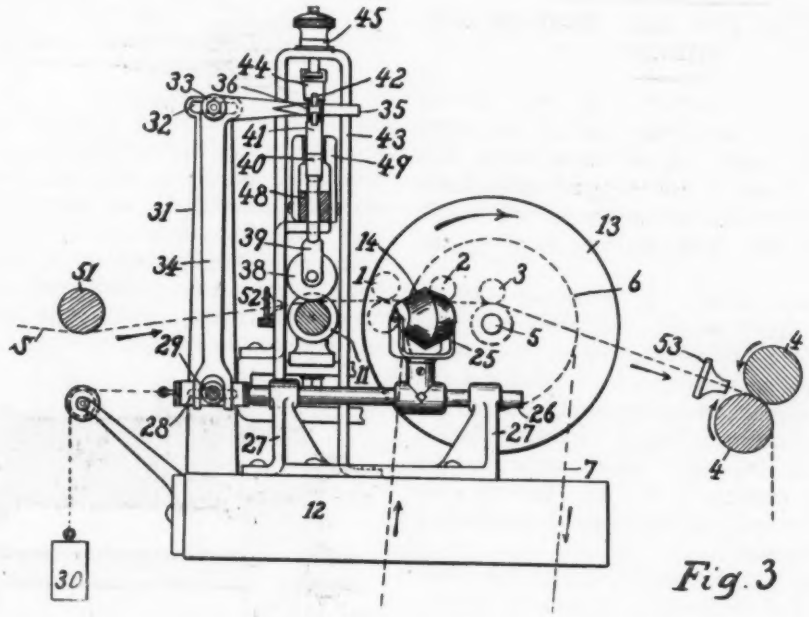


Fig. 3

52, indicates a stationary funnel, one for each groove, 37, and detector disk, 38, placed there for feeding, if so desired, two slivers in unison to each groove.

The four, compound or single, slivers as thus fed to the evener roll, 11, in its width, after passing from the latter to and between the set of three pairs of drawing rolls, 1, 2 and 3, issue then from the front roll as practically a single sliver, having a greater width than the normal. This sliver then is somewhat contracted and condensed by passing through funnel, 53, and then through the set of calender rolls, 4, the action of the latter rolls being the same as the similar rolls on regular drawing frames.

With reference to the detector mechanism of the new machine, i.e., grooves, 37, and detector disks, 38, it must be remembered that the former confines the sliver or slivers fed on all three sides, consequently, provided a sliver should enter one of the grooves in a normal vertical thickness but of greater lateral thickness, the side walls of the groove will cause the sliver to increase in vertical thickness and consequently move the detector disk, 38, to effect the desired change in the speed of rotation of the evener-roll, 11, and the back and middle drawing-rolls, 1 and 2, i.e., the detector disk, 38, responds to any variation from a normal thickness of the sliver whether in a vertical or transverse direction.

THE GIST OF IMPROVEMENT.

The important and distinctly novel feature of this new process is the regulation of the speed of the back drawing rolls by the sliver upon entering the machine, that is, the detector device acts to vary the speed of the drawing rolls, immediately a thick or thin place in the sliver reaches the rolls, and not

after a part of said imperfect sliver has gone through, as is the case with the old methods of railway heads; in other words, the evening process takes place always at the proper point and in exact proportion as required. This together with confining of the sliver on all sides so that any variation in size of sliver immediately emphasizes itself in the vertical direction only, allows the detector to act immediately and positively, giving in turn to the machine its wonderful results.

A SPINDLE FOR SILK WINDING MACHINERY.

As will be readily understood by the reader, on account of the class of machinery this spindle applies to, the same refers to a bobbin-support, for use in frictionally-driven horizontal bobbins, as commonly used in silk rewinding and doubling and twisting machinery.

The new spindle is provided with a weighted head whose circumferential wall (that engages its driving-pulley) is of wood, thus providing a driving-pulley of metal and a driven spindle whose engaging surface (its head) will insure a better frictional contact with the driving-pulley than a spindle whose engaging surface, i. e., its head is constructed entirely of metal and consequently is much heavier.

In order to more readily explain the construction and application of the new spindle to silk winding machinery, the accompanying two illustrations are given, and of which Fig. 1 is a side view of the spindle, its head, g, and connected parts being shown in central longitudinal section. Fig. 2 shows, in perspective, the bobbin as applied to the spindle, both being shown in working position in connection with that portion of a winding machine to which they more particularly refer, and of which letters of reference, a a', denote journal-bearings, in which is mounted a shaft, b, on which is fixed a metal driving pulley, c. d d' denote bearings, in which is revolubly mounted the new spindle, having mounted thereon bobbin e.

With reference to the new spindle, as shown in connection with Fig. 1 (complete), the same consists of a wooden spindle, f, having its end portions extended beyond bobbin, e, and head, g, so as to engage and revolve in the bearings, d d'. This head, g, as secured on one side to the spindle, f, is of wood, and counterbored from one end to receive a lead ring, h. When the described parts are assembled, they are secured together, and thus become practically a single structure, by a pin, i, that is driven through said parts.

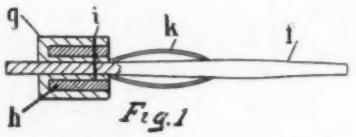


Fig. 1

This construction provides to the spindle a wooden head for frictional co-operation with the metallic driving-pulley, c, the metallic ring, h, as inserted therein, providing a degree of weight sufficient to hold the said head in close engagement with said pulley, in turn providing a reasonably light, cheap, and serviceable spindle.

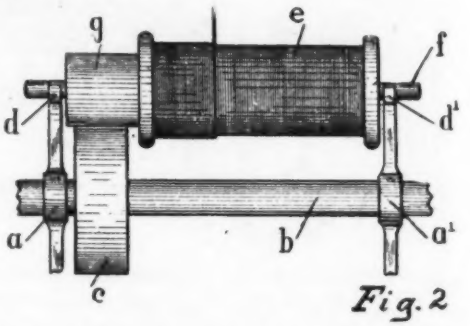


Fig. 2

The spindle (proper), f, is grooved longitudinally throughout a part of its length on its opposite sides, and in the grooves thus provided are located springs, k, supplied for the purpose of retaining the bobbin, e, on said spindle.

The exports from the United States to Australia in 1904 amounted to $4,591,945; the exports from Australia to the United States to $2,228,843.

In 1904 Australia exported wool to the value of 85 millions of dollars, and imported woolen goods to the value of 8 millions.

CORRESPONDENCE AND NOTES

Upon Textile Topics At Home and Abroad.

ORDER AND MANUFACTURING BOOKS FOR A WOOLEN MILL.

BY ERNEST RHODES.

Honors Grade Silver Medallist, City and Guilds of London Institute.

The first requisite in order to obtain the highest degree of efficiency in a woolen mill is a good system of management. This is by no means an easy task. The manager must not only understand the woolen business, but also have sufficient experience in organization to devise a system that will fulfill all reasonable requirements. To frame a system properly nothing should be left to chance. The organization, class of work and general conditions must be taken into consideration. A system that will answer well in a mill running from season to season on one class of work would not answer at all in a mill making a great variety of goods. In planning a system it will be found that the less elaborate it is, the greater are the chances of it being carried out properly; the more simple it is the fewer the openings for mistakes.

There is no kind of record that cannot be kept better and found more easily in loose leaf binders than in any other way. One of the best features of the loose leaf system is the advantage it has of permitting the removal of dead matter, leaving only the records that are in actual use. Records can also be classified in any manner that is thought best, either numerically, alphabetically, or according to date, thereby saving time in turning them up. While the initial cost may be slightly higher than for bound books, the great saving of time, added to its other advantages, more than offsets the difference in price. In the end it will be found that there is an actual saving in cost for the reason that additional leaves can be purchased cheaper than the new bound books. In ordering binders for the mill it will be found best to make a standard size, then the records can be filed away in any binder. Some departments will require only a clutch binder as they will have the records only temporarily. A very useful size is 5 1/2 by 8 1/2 inches, taking 5 by 8-inch sheets. Following is a description of the order and manufacturing books used in a fancy woolen and worsted

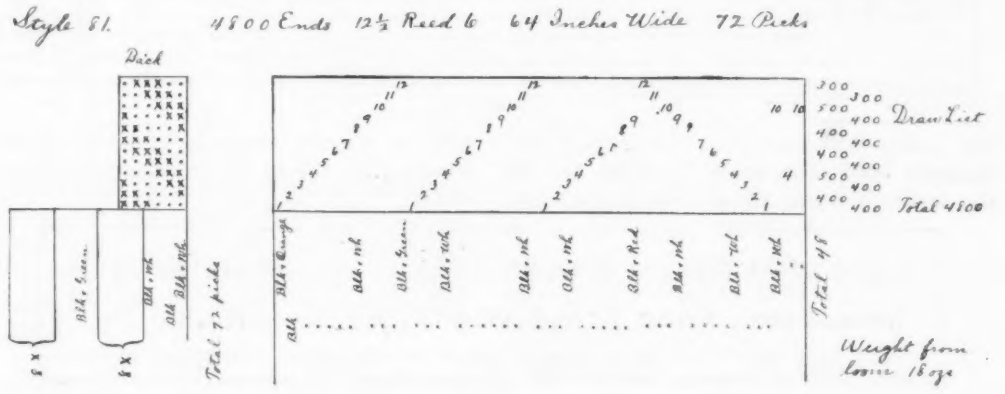


FIG. I.

mill doing weaving as well as spinning:

In the superintendent's office is the order book, stock and blend book, style book, and cost book. The dresser has the lay-out and dresser's book; the weaver has the lay-out and weaver's book; the finisher has a book with a record of weight greasy, weight finished, and all finishing particulars of all blankets and selling ends passing through his hand, as well as a record of all pieces.

The lay-outs are prepared in the designing room from the styles selected by the selling agents or the stylers. Great care must be used in making out these records as they form a guide for all the manufacturing operations.

Date Sept 10/05 Range No 048/3 Style No. 81

Ends 4800 Reed 12 1/2/6 Width 64 Picks 72

Warp	Dressed	Spools	Wt. per Cut-lbs
a 3/36 Black	6 3 3 6 3 5 3 4 3 36	7 3/4	21.4
B . Black & White	1 1 1 1 1 1 3 9	1 1/4	5.3
C . *21	1 1	10	.7
D . *22	1 1	10	.7
E . *23	1 1	10	.7
	48x10x10=4800		28.8
Filling			
a 3/36 Black			24.4
B " Black & White			.8
C . *23			.4
			25.6

FIG. 2.

Date Sept 10/05 Range 048/3 Style No. 81

Ends 4800 Reed 12 1/2/6 Width 64 Picks 72

Grease Wt. Finished Wt. Price Cost No.

Warp			Wt. per Cut-lbs
3600	Ends 3/36	Black	21.4
900	" .	Black & White	5.3
100	. "	*21	.7
100	. "	*22	.7
100	. "	*23	.7
4800			
Filling			
69	Picks 3/36	Black	24.4
2	"	Black & White	.8
1	"	*23	.4
72			

FIG. 3.

Fig. 1, shows a lay-out used in the weave room. The ends in the warp, reed, width, and picks per inch are given at the top. Below is the drawing-in draft, and directly un-

derneath the dressing pattern. The dressing pattern put in this position enables the drawer-in to see the position of the colors. To the right of the drawing-in draft is the number of heddles required on each harness. To the left is the harness draft with the picking pattern directly underneath, showing the bars the colors should fall on. With a lay-out like this there is no excuse for a warp being started up wrong as both the drawer-in and the chain builder can see that the colors are in their proper places. The weight per yard from the loom is also given.

Order No.	Date	Date Wanted	Date Completed	Folio No.
Ordered by				

Piece No.	Style	Entered	Dressed	Woven	Finished	Remarks

FIG. 4.

Fig. 2 is the lay-out for the dressing room. Here are all the particulars required by the dresser. The ends, reed, width, and picks are given at the top; then comes the dressing pattern. The number of threads of each color is placed at the end. The total number of ends in the pattern is then multiplied by the number of patterns in one section and by the number of sections in the warp. Then follow the counts and colors in the warp and filling. Opposite each yarn is the weight in pounds of each color required for one cut, and opposite the dressing pattern is the number of spools.

The superintendent's lay-out, Fig. 3, is made from these two records. The use of this record will be explained later. The dresser's and weaver's lay-outs are used for making the selling ends, after which they are sent to the dresser and weaver respectively. Orders when received are copied on a special order blank, Fig. 4, printed for this purpose. By the use of carbon paper these are made out in duplicate, one being kept in the superintendent's office, the other going into the shipping room. The price numbers are here given. The assistant superintendent or clerk now takes the order form and makes out the warp ticket, Fig. 5, from the superintendent's lay-out, puting down the weight of each kind of yarn required for the pieces. These tickets can be made in three colors, say, white, blue and red. The white tickets take the ordinary course through the mill; blue tickets have precedence over the white; red tickets are for rush orders.

Date		Style No.	
Ends		Reed	
Widths		Picks	
Date Wanted			
Pce. No.	Warp		
	Wt.	Lot No.	Counts	Shade
	Filling			

FIG. 5.

After making out the warp ticket the clerk enters the piece numbers on a plain leaf filed along with the lay-out, so that the number of pieces of each style ordered or made can be ascertained at any time. The warp tickets are then compared with the stock records to see if there is sufficient yarn on hand to make

Article 2/36 White #15

Date	Ordered	Received	Delivered	Lot No.	On Hand
Sept 20	5000	4905			
Sept 21			80	469	4825
Sept 28			105	431	4720

FIG. 6.

the goods. The stock forms are made out as shown at Fig. 6, and can be filed in the yarn and blend book along with each kind.

If there is not sufficient yarn on hand an order is made out for the department making

the yarn and the amount ordered entered along with the date on the stock sheet. When the yarn is made it is entered in the "Received" column and when used the quantity and the order it is used for are recorded. If the yarn is woolen the order can be made on form Fig. 7, and sent to the picking room, passing from there through the card room to the spinner, who, after the yarn is spun, marks the amount of each kind and returns the sheet to the office. The prices of materials used are recorded and extended, the cost of the yarns found, compared with the original and previous blends, and filed for reference. The warp tickets are then ready for the dresser who puts them in work in the order wanted.

Date	Lot No.	Shade
Warp	Twist	Fill

Lbs	Material	Price	Amount	
	Gals. oil			
	Wt. Warp Twist Fill			
	lbs. spun			
	Loss Cost			

FIG. 7.

Each morning a report is sent to the office from the dressing room, weave room and finishing room, giving piece numbers and style numbers of all work put through the previous day. These reports are entered, giving dates when pieces were dressed, woven, or finished. The superintendent is thus able to see at a glance the condition of any order, and if an order is delayed to locate the trouble at once. Sometimes a piece may be taken from one order to help out another. When that is done the piece numbers that are changed should be marked opposite the numbers they displace. The piece numbers on the finishing room report can then be turned up and a check mark placed opposite each in the style book. By checking the piece numbers in this way the number of pieces made and the number in work can be found very easily.

These records can then be sent to the shipper who marks off his order in the same manner. The shipper sees the condition of each order and if he thinks any order has been overlooked he can call the attention of the superintendent to it.

Each department should keep a record of all work done and all materials used; a report being sent into the office each week. These reports can be summarized and from the general report the superintendent has a good idea of the relationship of each department to the mill as a whole and also knows whether each department is worked economically and up to its full capacity.

The exports from the United States to China in 1905 were nearly two and two thirds times larger than those of 1904.

The imports of carpets and rugs into the United States for the twelve months ending June 30 show an increase over 1905 of 363,155 square yards.

The total value of the cotton manufactures imported into the Chinese Empire in 1905 amounted to $132,450,646 gold. Of the 27,724,980 pieces of plain fabrics, 13,548,025 came from Great Britain and 12,566,093 pieces from the United States.

THE PROCESSES OF SILK FINISHING.

BY JAMES CHITTICK.

(Continued from October.)

The goods are now run through, being drawn along by a take-up roller at the end, and the rollers revolve freely and easily with the cloth, each nail head giving the cloth a dig and so breaking up the gum, but as the nails move with the cloth there is not much tendency on their part to shake the gum free. If on the first run they are not softened sufficiently, the operator will pass them through again. Rollers should be properly aligned and all buttons in good shape evenly spaced and of same size and height, or goods may be damaged by streaks. The upright button breaker is generally preferred, as it takes less room and allows a greater freedom of adjustment.

Another kind of breaker is the knife breaker, which consists of a frame with one or more wooden cylinders eight or ten inches in diameter, on which are fixed, in a spiral or in some curved form, a series of knives about one and a quarter inches high set at right angles to the surface of the cylinder and spaced, say, three inches apart. The goods are run over this while it revolves against them, and while it has a softening and polishing action it will of course rob them of much of their gum.

Goods with plenty of silk in them are not usually gummed unless the fashion of the day demands some unnatural stiffness, or unless the weave be of a character where the threads are likely to slip; the gumming in a measure helps to prevent this. The cheaper grades of goods are generally gummed, and this added thickness and stiffness serves to make them satisfactory for uses where otherwise they would not be acceptable. It is, however, as true as of old that a silk purse cannot be made out of a sow's ear, and while it is necessary to add to the body of many goods by sizing them so as to give a commercial article at a low price, yet the gumming generally detracts from the lustre and silkiness of the cloth.

In addition to these methods, silk goods, either gummed or ungummed, weighted or pure dye, are readily softened with heat and pressure, and for these purposes cylindering machines, calenders, tuiles, presses, etc., are used. The effect of heat and pressure is to make the fabric softer and more lustrous, but at the same time it loses much of its apparent fullness or hand. Fabrics with plenty of silk in them can stand this and be greatly helped by it, but for poor or thin cloths it would not do as it would make them too flimsy.

Calenders are made with two or more large heavy rolls, usually three or four, set one above the other in a strong and heavy frame and with arrangements for pressing them heavily together. It is usual to have at least one of the rolls hollow so that it can be heated from the inside, and the thickness of the rolls will generally be from about eight to fifteen inches. One or two of the rolls in a calender will be of paper. The sheets of paper are cut in a circular form perhaps twelve inches in diameter or whatever the roll is to be, and have a round hole in the middle four or five inches across. They are then slid on to the steel shaft or mandrel that forms the core of the roll, which they fit exactly, steel caps are put on the ends, and the paper sheets are squeezed together under enormous pressure. The roll is then faced off on a grinder and looks and feels almost like iron, but being in a measure resilient it does not glaze the goods so much as iron would. When they wear out of true these paper rolls can always be faced up again. The paper used is a tough, heavy tissue paper, white or grey; the French paper is generally considered the best.

Calender rolls must be true, smooth and absolutely free from flaws, as such places will mark the goods. For this reason cast iron makes unsatisfactory rolls, being subject to faults. Steel will do for the all-metal rolls but for the heated rolls nothing is better or harder than chilled iron. The making of these chilled rolls for calenders is quite a specialty with some manufacturers. The hollow rolls can have closed ends and be heated by steam, or open ends and be heated by gas. The bore should be of liberal size, and an air blast from a positive blower

should be provided for the gas, a perforated gas pipe, the length of the roll, being inserted for use as a burner. A storage, or air pressure tank, between the blower and the jets is very desirable. The heat given to the hollow roll, the number of rolls used, the order in which the goods pass between them, and the pressure put on the rolls is a matter of judgment with the finisher. The goods may even be run through several times before the desired softness is obtained, and they may also be calendered cold.

Everyone is familiar with the hydraulic press, its ponderous character, the enormous power it exerts, and its hollow steam heated plates. Such a machine needs a very solid foundation, and is usually erected on a basement floor, though it may pass up through the floor above. If put on any floor above the basement most substantial supports must be provided.

Goods to be pressed are put up in flat folds with a thin, hard sheet of pasteboard, called press-board, between each fold. In between the pieces of goods as they are piled come the hollow metal plates, well braced on the inside to prevent their being crushed, these plates being connected with each other by flexible pipes, through which either steam or water can be passed, usually steam. Then the pressure is put on and the goods can be given either a cold or a hot pressing as may be desired, or they may first be pressed hot and then cold water be passed through the plates so as to cool them before the pressure is removed. They will generally be left in the press over night and are cold when removed.

The great advantage such presses have over any machines of a rotary character is that the goods remain under pressure for such a length of time that the finish given acquires a permanence that it might otherwise not obtain.

For silk finishing such a press should have plates that will take goods at least thirty-six inches wide laid in folds of the usual one and one-quarter yards, and wider would be better, as then two narrow pieces could be laid side by side on the same plate, thus increasing the capacity of the machine.

Screw presses driven by power can also be used and are fairly effective if well mounted, but the hydraulic press is much the best. Calenders and presses, be it noted, are not only very heavy but are very expensive machines.

Goods can also be treated by cylindering which gives in effect a sort of ironing to the fabric. They are passed, under strong tension, over or around a heated cylinder, which comes in contact with the silk. It may be either stationary or may revolve with or against the goods. Arrangements should be provided so that, if desired, live steam can be blown upon the goods before they reach the cylinder.

For certain finishes goods are sometimes cylindered cold, being passed through the machine as often as necessary to obtain the desired result.

The tuile is a machine in which there is a horizontal, steam heated cylinder, about eighteen inches in diameter, covered with a very thick, seamless, woolen blanket. This is specially made in circular form and is drawn on over the end. This cylinder rests in a long, trough-like, heavy and hollow casting, also heated with steam, which fits closely to the cylinder and extends up to about the height of the middle of it. The face of this casting, where the cylinder meets it, must be very true, perfect, and well polished. The machine has the usual take-up and let-off rollers and can also be equipped with some device for steaming the goods if desired. The pieces are drawn through the machine, the blanketed cylinder traveling with the goods and pressing them strongly against the smooth, heated surface beneath, the pressure against which can be regulated.

This is exactly the reverse of the ironing of the laundry-man. In his work the thing to be ironed is put on a soft blanket, or cloth, and rubbed with the iron. In the case of the tuile the silk is stretched round the blanket and rubbed against the iron. This machine, which is an imported one, gives most excellent results.

In making use of any cylindering machines the heat given to the cylinders should be known, and special thermometers should be attached to them. This is not only for the purpose of getting regular results, but be-

cause, if the heat is too great, many shades will change color, generally getting faded. A piece of goods where the color matched the sample exactly before finishing may be quite a distance off shade after finishing.

In connection with any of these cylindering machines it is quite customary to have an expanding roller, mounted just before where the goods come to the take-up roll, which stretches out the goods to their full width and takes out any creases, so that they will be rolled up true and smooth. These rollers are sometimes wood and sometimes brass, the surface being grooved in various ways, but a wood faced roller with a good quality of felt securely glued to the face will be found to answer very well.

(To be continued.)

COST KEEPING IN A COTTON YARN MILL.

BY M. A. COOPER.

Having in previous issues dealt with the methods adopted to obtain the production of yarn from the various rooms and keep track of same, I will now show the books supplied to the several overseers to obtain the cost of wages per pound in each process.

The head carder has charge of the books shown in Figs. 1 and 2. In the former he enters the number of hours worked daily by the help in the mixing and blowing departments, also the weight of cotton from the finisher lap machine, every lap being weighed and recorded as it comes off the machine.

When the week is complete, by dividing the total of these wages by the weight of laps turned off, the cost per pound in wages in this department can be accurately obtained.

In the card room department, Fig. 2, nearly all the help are paid by the piece, that is, so much per hank, the frames all being supplied with indicators, which register the number of hanks turned off per week. A page is taken for each tender, the drawers and slubbers being worked singly, while the intermediates and rovers are worked in pairs, in order to prevent the necessity of writing all the names out every week. Two weeks' wages are shown in the sketch, to illustrate better how the figures of the indicators have to be used in each week. The number the indicator stood at on Nov. 21, being brought down to deduct from the showing of the indicator on Nov. 28, the difference between the two being the number of hanks produced by the frame. This has to be done weekly on all the frames in order to ascertain the num-

Mixing & Blowing Room Dep't.

Week Ending Nov 28/04.

Occupation.	Tues.	Wed.	Thurs.	Fri.	Sat.	Mon	Total	Rate	$	cts
Cotton Mixer	10	10	10	10	5½	10	55½	9 00/100	9	00
Bale Breaker Feeder	10	10	10	10	5½	10	55½	5 00/100	5	00
Assist. do. do	10	10	10	10	5½	10	55½	4 00/100	4	00
1st Hopper do.	10	10	10	10	5½	10	55½	"	4	00
2nd do. do.	10	10	10	10	5½	10	55½	"	4	00
Blowing Room Major	10	10	10	10	5½	10	55½	9 00/100	9	00
Lap Stripper	10	10	10	10	5½	10	55½	6 00/100	6	00
do. Finisher	10	10	10	10	5½	10	55½	7 00/100	7	00
	Weight Laps made 58 500 lbs.								48	00

FIG. 1.

ber of hanks turned off. From these figures the total production of the entire card room can be calculated theoretically, which is useful as a check on the actual production, to see that it is being kept correctly. A record is kept of the number of "sets" or "skips" of rovings taken from the card room daily, and at the week end these are added together and calculated at an average weight to ascertain the weight of rovings produced weekly. From this weight and the total wages of the operatives as per the overseers' book, the ex-

Card Room Dep't.

No. 1 Drawer.

Date	Indicator last week.	Indicator this week	Hanks.	Total Hanks.	Price per hank	$	cts
Nov 21/04	50	22	72	72	.09	6	48
" 28/04	22	95	73	73	"	6	57
		No. 1	Slubber.				
Nov 21/04	38	6	68	68	.09	6	12
" 28/04	6	76	70	70	"	6	30
		No. 1.2	Inter.				
Nov 21/04	89	45	56				
	45	2	57	113	.06	6	78
" 28/04	45	3	58				
	2	60	58	116	.06	6	96
		No. 1.2	Rover				
Nov 21/04	20	64	44				
	68	12	44	88	.06	5	28
" 28/04	64	10	46				
etc.	12	57	45	91	.06	5	46

FIG. 2.

Mule Spinning Dept.

No. 1 Spinner.

Date	Indicator last week.	Indicator this week.	Hanks.	Total Hanks	Counts	Price per 1000.	$	cts.
Nov 21/04.	35000	72500	37500					
"	16500	54500	38000	75500	38s	28¢	21	14
Nov 28/04	72500	10500	38000					
"	54500	91500	37000	75000	"	"	21	00
etc.								

FIG. 3.

act cost per pound in wages is easily found.

The overseer of mule spinning has charge of the book shown at Fig. 3. All the self-acting mule frames are supplied with indicators and worked in pairs, and the help are paid by the piece, or so much per 1,000 hanks. The minder receives the wages off each pair of mules, and pays his helpers, usually a young man and a boy, himself.

The actual weight spun is obtained from the cellar book. The cost of labor per pound for mule spinning is then obtained from the weight and amount of payroll. For the ring spinning department, the help being practically all on day wages, the book, Fig. 4, contains simply the names and rate of wages of each operative, with number of hours worked. The cost per pound is calculated from the payroll and weight of yarn spun, the latter being obtained from the ring room weight book.

The labor cost per pound for winding, reeling and warping is obtained in the same way, the winders being paid by the score, each operative's name is put in the book, Fig. 5, and the weight of each "set" or skip of yarn she winds entered. This weight is taken from the ticket that is put on the set when weighed in from the spinning room. The winder retains this ticket until the making-up day, as proof having wound that amount of yarn.

The reelers are paid by the score "doffings," or by the number of knots reeled. These knots are counted daily and booked to the reeler. As a certain number of knots of the different counts represent a certain number of doffings, the wages are calculated ac-

Ring Spinning Dep't

Week Ending Nov 28/04.

Name	Tues.	Wed.	Thur.	Fri.	Sat.	Mon.	Total.	Rate	$	cts
No 1 Spinner	10	10	10	10	5½	10	55½	4 50/100	4	50
" 2 do.	10	10	10	10	5½	10	55½	4 00/100	4	00
" 3 do.	10	10	10	10	5½	10	55½	3 50/100	3	50
" 4 do.	10	10	10	10	5½	10	55½	4 75/100	4	75
etc	Weight Spun 21630 lbs.									

FIG. 4.

Winding Dep't.

No 1 Winder. Week Ending Nov 28/04.

	Counts	Weight of Sets					Total lbs	Price per score	$	cts
Tues.	36s.	35.	34.	36.	35.		140	13¢		91
Wed.	28s	34.	34.	32.	33.		133	11½		77
Thur.	32s	35.	35.	33.	34.	32				
Fri.	"	33.	35.	35.						
Sat.	"	31	31.				468	12½	2	94
Mon	"	33.	33.	34.	34.					
							741.		4	62
etc.		Total Weight wound				18610 lbs.				

FIG. 5.

cordingly. The total amount of wages is divided by the total weight for the week, which is obtained from the ticket on each set of yarn, the result being the cost per pound in wages.

The warpers and beamers are paid so much per 1,000 hanks. The weight of each count turned off daily is entered in the book, Fig. 7, and at the week end these weights are multiplied by their counts to bring them into hanks. The individual wages are calculated from this. The total wages are then divided by the total weight in the usual manner, to get the labor cost per pound for the week.

By using these books in conjunction with the office books, the exact cost per pound for wages and expenses for any counts of yarn in the mill can be obtained from the actual production in a practical and absolutely correct manner. This has been proved by actual experience. Each process being dealt with separately every week, and compared with previous weeks' workings, any increase in the cost per pound is at once noticed by the management, and receives prompt and special attention.

Reeling Dept.

	No. 1 Reeler. Nov 28/04.						No. 2 Reeler.					
	30.	32.	34.	36.	38.	40.	30.	32.	34.	36.	38.	40.
Tues.	160							120				
Wed.			120					130				
Thur.		150						120				
Fri.						100				110		
Sat.					60					50		
Mon.				130						110		
	160	150	120	130	60	100		370		270		
etc.	Total Weight reeled 1078 lbs.											

FIG. 6.

Beaming & Warping Dept.

	No. 1 Beamer. Nov 28/04						No. 1 Warper.					
	30	32	34	36	38	40	30	32	34	36	38	40
Tues	386							320				
Wed.	460							335				
Thur	456							325				
Fri					430					302		
Sat					236					156		
Mon					395					295		
	1302				1061			980		753		
etc.		Total Weight beamed 9461 lbs.						Total Weight warped 8968 lbs.				

FIG. 7.

ENGLISH NOTES.

(By Our Special Correspondent.)

A concession granted in April last by Menelik II. Emperor of Ethiopia, has a peculiar interest for makers of American brown sheetings. Some 30 million yards of these goods annually valued at about $1,600,000, are stated by French officials to be sold now in Abyssinia. The sheetings are used largely to make tents and as the cloths are not waterproofed they leak in some circumstances and are inconveniently heavy in transport when wet. It was left for the representative of Armenian merchants in Manchester to show Menelik that sheetings could be made to turn water and in his delight the Emperor gave to this person the "sole right, for a period of 25 years, to import and sell in Abyssinia all kinds of waterproof cotton cloth and other rainproof material of whatsoever nature." This monopoly is to be exploited by a company which has already forwarded shipments of Lancashire goods, imitating the American make and rainproofed by the best of the wax processes, to Abyssinia. The company aspires to do one-fourth of the trade and to make a profit of 75 cents per 30-yard piece. Perhaps the experience will encourage American exporters to put perfected articles before their foreign customers.

o o o

Some words of its Vice-chairman show that Northern Nigeria has by this time become the main hope of the British Cotton Growing Association. It is proposed to raise a million dollars to spend there during the next few years in growing cotton of the American type. Money is begged, not as a charity, but as an advance of funds which will all return to England in the guise of orders for goods.

* * *

Henry McNeil asserts that at least 2 1/2 million dollars' worth of cotton was brought to England last year from fields in which cotton was not previously grown; also that next year cotton ginning and packing machinery worth a quarter of a million dollars must be sent out to West Africa and in the year after, half a million's worth. In a further statement the same authority remarks that natives are so fortunately circumstanced that their profit from cotton growing is so much pin-money. Were prices to fall in any given season, the event would cause no distress. This is a view of the case that is hardly borne out by experience in places where associations of one nationality or other have reduced the prices at which they buy seeds.

Hitherto, Northern Nigeria has been notable rather for native risings than for steady industry. White traders in the country complain bitterly of the absence of roads and of the burden of taxes, which rise to within 50 per cent. of the value of the trade they cumber. There are people who believe that much may be done with this great lone protectorate, but everything remains yet to be done and meantime prophecy is speculation indeed.

* * *

One part of formaldehyde in 100,000 parts of water suffices to prevent the growth of the anthrax bacillus, but does not kill the spores from which new bacilli may spring. A one per cent. solution effectively disinfects bales opened in the bath. Steeping unopened bales of wool and hair has been found ineffectual. Experiments, still unfinished, are being made with formalin gas and these should be interesting as progress is favorable thus far. A suggestion in the air is that wools known to be dangerous be only combed in works licensed for the purpose and subject to special supervision by officials. Many spinners who have combs decline to comb wool of evil repute on their own premises. Rather, they will send it to be done by commission combers, and this tends to concentrate such combing in a few hands. As a purely commercial matter, will not this create a special class of combers who will be able to exact higher prices for combing?

* * *

Trade in cotton cords and fustians, moleskins and the like has suffered from the competition of cheap woolens. That is so in the Colonial markets that England supplies as well as in the home market. The number of corduroys worn still by masons, quarry-

men, carters and railway servants keeps a trade alive which is supplied by cloths from Bury in Lancashire and from Hebden Bridge, Yorkshire. Here are the prices paid in Bury for weaving:

Counts of Filling:	14	16	18	20	22	24's
Price per lb., pence,	2 1/16	2 3/16	2 3/8	2 5/8	2 7/8	3 1/8

Two or three hundred weavers in Hebden Bridge are on strike for the Bury rate of pay rather than work at prices between one farthing and five-eighths of a penny per pound less.

* * *

Among the most lucky mistakes ever made in the textile industries was one by a foreman in a Yorkshire mill making stockinette glove fabrics. He milled some pieces containing mohair and wool so hard as to ruin them for their destined market. The error earned him a severe reprimand. Incidentally, also, it earned a fortune for his employer, during two or three years in which he had the cream of the trade in a new type of fabric unreservedly at his disposal. The treatment had broken out the mohair in curls and the boucle fabric became the rage. There must be other cases surely of a happy mischance.

* * *

Advertising of patent finishes makes more headway in England than does advertising of cloths. The reason is that the trade-marked finishes are the property of the chief piece-dyeing combine and are applied to many more cloths than any one mill could turn out. Advertising has been profitable to the Bradford Dyers' Association, because it has made practicable good prices for the work done. It has discounted the value of all competing and unadvertised finishes, and it has fed the dyeing departments, for the patent finish will be applied only to solids dyed in Association works.

That being so, it is not surprising to find the number of specialties increasing. One that is making a noise in the world is stamped "Soap-shrunk," and it shows to advantage on worsted dress-checks and on self-dyed goods also. Whether there is any further secret in the process, its proprietors will best know. But what passes for soap-shrinking in the ordinary dye-house is a quite simple process. The goods are run through a "three-hole nip," or in other words, are passed through two baths of light lather from a neutral soap and then through one of warm water before passage to the drying machine. According to circumstances, the proportion of soap may vary. It is usual to employ such a strength of solution as feels faintly slippery when tested between thumb and finger.

* * *

Artificial silks would make more headway but for one frailty that tapestry makers have discovered. To form figures on tapestry it is necessary to weave floats. The slightest finishing process—were it only hot-pressing—has been found to change the color of the floated threads from that of the interlaced threads in the surrounding fabric. It is a matter, also, of personal knowledge that lining and other makers who have turned hopefully to artificial silks have been driven back to the natural article or to mercerized cotton. Of course throwsters and spinners will regret to see the disabilities of the artificial article removed and are loath to believe that defects of the kind noted and of elasticity, cover and durability ever can be obviated.

* * *

The cloth boards in use in England are made at a very low cost by the builders of packing cases. Wood rough-sawn and coated with blue or white tissue paper is cheaper and is used more commonly than the stout planed boards, with an ornamentation of enameled paper upon their beveled ends, which also are seen frequently. A dress-goods firm, known equally well on both sides of the Atlantic, uses a heavy varnished board of greater length than the width of the goods and the board forms part of their advertisement. It is part and parcel of the trade characteristic of the cloths and must be recovered later to prevent misuse.

In selling to countries in South America and Europe, in which duty is payable on gross weights, our merchants simply dispense with boards. After rolling, the board is withdrawn and very limp parcels of good woolen or worsted are sent out, the wooden packing-case preserving them from harm in

transit. From the mills most goods come in press folds, the merchant rolling the goods after measuring them. Rolled pieces, except in a minority of cases, are preferred to folded or "cuttled" ones by customers abroad.

* * *

The large color-makers are most assiduous in their offers to show manufacturers how their new colors should be applied and large expense is incurred by them in lending expert assistance. No remissness can be charged to them in that direction. In the larger dye-works there is a disposition to impute to them a desire to see how the cost of their novelty "pans out" when worked on a grand scale. Color-makers are thought not to be in too great haste to displace another color by showing too great an advantage in price over it. That may be as it may.

* * *

Grumbling is general and is well-founded against the helpless ignorance of many salesmen put on to sell drysalteries and chemicals for mill use. The practical man looks to the seller for practical knowledge of the wares he sells and generally fails to find it. The ordinary salesman is just as solicitous to sell what will not be suitable as the article which will and simply for the reason that he is unable, in face of an emergency, to discriminate between the capacities of each. Bad for the mill, this is probably worse for the drysalter and one would not be at a loss to find the founder of a very flourishing business whose strong claim to attention was that he selected his stock with extreme care and could always tell a customer the truth as to what material to try.

Massachusetts is the only state in the Union that has provided for the erection and maintenance of textile schools for the exclusive purpose of giving textile education.

In the year ending June 30, 1906, the exports of cotton cloths from the United States to China were valued at two million dollars more than for the same period in 1905, and the number of yards was about 24 millions greater.

FASTENING THE SCHREINER FINISH

A method of treating goods finished by the Schreiner process to make the luster more durable has recently been patented in this country and is described by the inventor as follows:

Certain classes of piece goods have for a long time been passed between rollers engraved with fine parallel lines in order to give a silk-like gloss or luster, which is commonly known as Schreiner finish. The gloss or luster produced by such mechanical means is, however, fugitive, being lost to a certain extent when the goods are exposed to a moist atmosphere, rain or the tailor's iron. Efforts have been made to render such mechanical finishes permanent, and many processes have been tried; but up to the present time only a very partial success has been obtained. For example, it has been proposed to render permanent the finish produced by the Schreiner rolls by treating the goods with different solutions of nitrocellulose; but for various reasons such processes have not produced wholly satisfactory results. It has been ascertained that this is attributable to the character of the solvents employed.

With some solvents the moisture which is always present in the fabrics causes the nitrocellulose to be deposited in an opaque instead of a transparent form, thus changing the appearance of the goods. Some solvents are highly inflammable and explosive when their vapors are mixed with air, and are therefore dangerous. Some solvents act as anesthetics, and are therefore dangerous to the life and health of the workman. Some solvents impart to the goods a disagreeable smell. Some solvents have too high and others too low a boiling-point to render their use easy, and so on.

After a long series of experiments and after trials of almost all known and many hitherto unknown solvents one has at length been discovered which is free from all of the above-named objections. This solvent is amyl formate, (the formic-acid ether of isoamyl alcohol.) Its use is free from danger, it does not render the nitrocellulose opaque, and it has a comparatively high but not too

high a boiling point, 255° F. The solution also is very fluid, and consequently it is possible to produce extremely thin films or coatings on the fibres of the fabric, which is a matter of great importance. A five per cent. solution is suitable and it may be applied to the fabric in any of the usual ways—for example, by spraying. The solution is preferably applied twice in succession, the solvent being evaporated after each application; but the resulting coating should not form a complete skin, nor should it waterproof the fabric, but be merely enough to fix the mechanically-produced luster finish.

PLAN OF A WEAVING MILL.

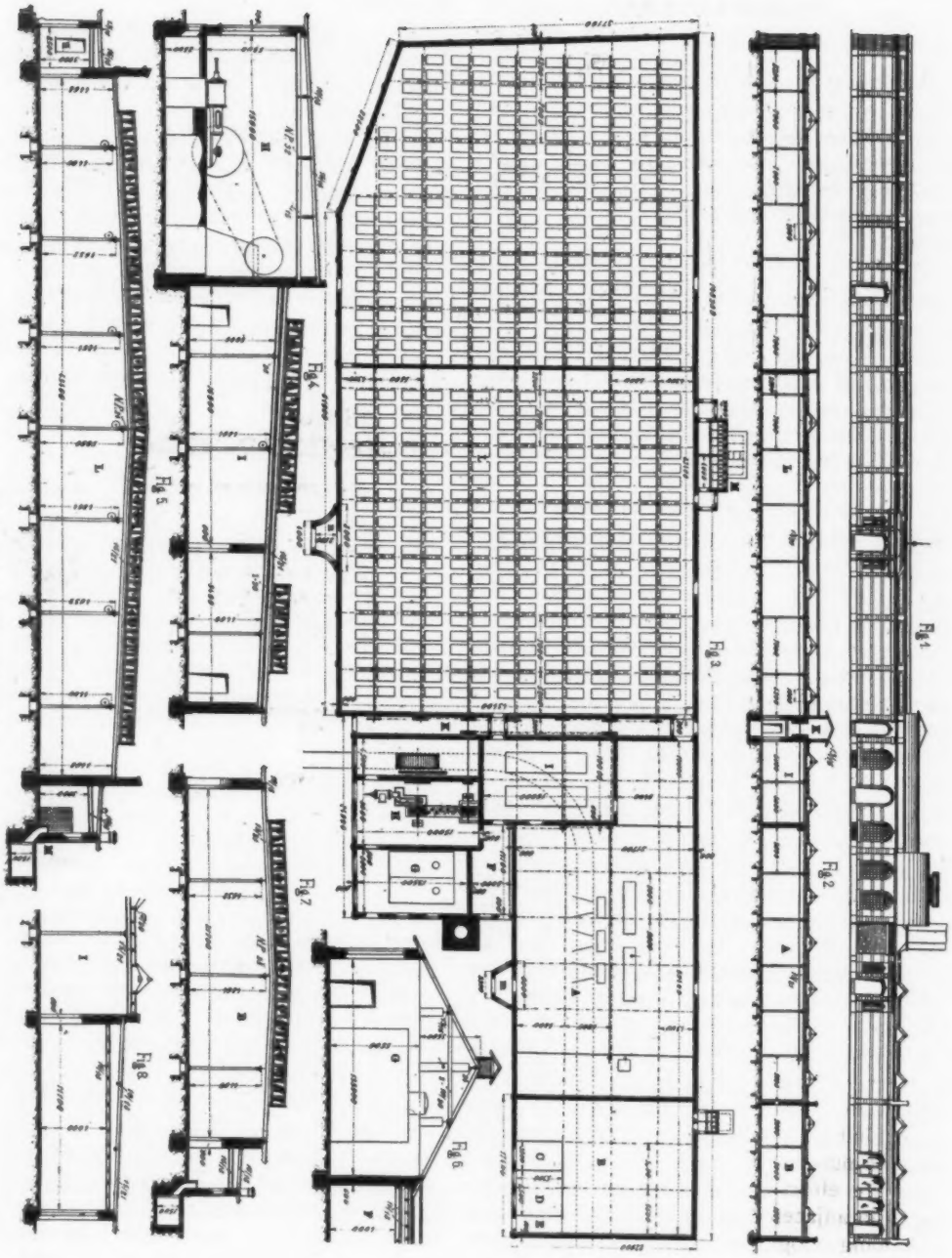
Figs. 1 to 8 show the arrangement of a 600-loom weaving mill in Belohrad, Germany. The mill is divided into two parts by the belt way, K, running across the building. The right wing is used for offices, shipping rooms, warp preparing, power station and repair shops, while the left wing is divided into two weave rooms, which can be joined in one if desired. The office and shipping room employes enter by the hall way, E, at the extreme right; this leads on one side to the counting house and superintendent's office, C, and at the end to the shipping room, B.

The spaces between posts in this room are as follows: three, 18 ft., 2 in.; three, 19 ft.; one, 14 ft. There is a cellar under the shipping room, which is used for storage of yarn. Adjoining the shipping room is a warp preparing room, A, the two being separated by a glass partition. In the warp preparing room are two warp spooling machines of 160 spindles each and three warpers. There is a room for drawing-in, warp twisting, and the storage of beams, ample not only for present requirements, but for any future enlargements of the mill. The in the tower, N. In this tower is an entrance to the repair shops, F, adjoining warp preparing room is reached by a door which is the sizing room, I, containing two cylinder sizing machines. Behind the sizing room is another room in which the warps are delivered ready for weaving and which is accessible from both the warp preparing room and the weave room.

Under the shipping room, warp preparing room and sizing room is a canal through which the water flows to the water wheel between the belt way and the engine room, H. The power house contains one 75 h. p. engine with room for doubling the capacity. The water wheel and steam engine can be connected by a coupling on the main shaft. Next to the engine room is the boiler house, G. The weave room, L, is divided into two parts; the first at the right is already constructed and the left side is planned for future extension. The weave room, F, contains fourteen rows of 22 looms each, making 308 looms in all. The shape of the other weave room, which is yet to be built, is irregular according to the formation of the ground. It will contain eleven rows of 22 looms each, one row of 21 looms, one of 17, and one of 12 looms, making 292 looms in the second weave room, or 600 looms in both.

The cast iron posts supporting the roof are 22 feet, 9 inches apart lengthways and 19 feet apart crossways. Each bay contains 8 looms making 54 1/2 square feet per loom. The weave room is provided with a large number of exits enabling the operatives to leave the room quickly in case of danger.

The roof is of the monitor type, the construction being shown by Figs. 1, 2, 4, 5, 7 and 8. The skylights, 11 feet, 6 inches wide, are each located in the centre of a bay and run cross ways of the mill, an arrangement which is said to give the best distribution of light. The belt way, shown at Fig. 3, illustrates the manner in which the power is distributed from the central station to the different departments. The looms are driven from seven lines of counter shafting by half turn belts. This arrangement has been found very economical in the transmission of power. Experience has proved that the objections to this method of driving are largely unfounded, while the low cost is an important consideration in its favor. Fig. 1 shows the exterior of the mill, which is equipped with the latest machinery throughout.—Uhland's Technische Rundschau.



PLAN FOR A WEAVING MILL.

AN IMPROVED THREAD GUIDE FOR SPINNING FRAMES.

Attaching the thread guides of a spinning frame to the ring rail so that the guide and ring vibrate together and remain the same distance apart from start to finish of the bobbin is the subject of a recent patent. The inventor describes the arrangement as follows:

Heretofore the thread-board which supports the thread-guides has usually been secured in a stationary manner to the roller-beam of the machine. The traverse of the ring-rail of a spinning-machine is considerable, and accordingly the distance between the travelers or winding-points and the thread-guides varies greatly with the movement of the ring-rail, making the swing of the thread so variable that anything like an even or uniform tension on the thread is not secured. When the ring-rail is at or near the bottom of its traverse, the tension on the thread is comparatively loose and there is too great a length of uncontrolled thread, which often results in ballooning, fouling, and breaking the thread; when the ring-rail is at or near the top limit of movement the short distance between the winding-points and thread-guides results in an excess of tension and makes the thread liable to break. These undesirable features in the usual methods of spinning and winding, besides interfering materially with the continuity of movement of thread, limits the speed of the spindles.

One method which has been used in the attempt to regulate and keep constant the tension of the thread during the travel of the ring-rail or its equivalent part is to provide a traveler of such weight as will best suit the conditions under which the frame is running; but this system has proved inadequate for the purpose designed.

In the effort to provide means for preventing the adjacent threads from ballooning or whipping together and the consequent breaking of one or both threads, separators have also been placed between the spindles; but many disadvantages are attendant upon the use of such devices, and they often accentuate the defects they are intended to prevent.

This new arrangement is designed to avoid these difficulties and other disadvantageous features of spinning-machines.

The invention provides a novel mounting for the thread-guides, which are supported by the ring-rail in such manner that both guides and rail keep constant the distance between the winding and guiding points for the threads. Means are also provided by which the vertical distance between the thread-guides and the winding-points can readily be increased or decreased, and means are further provided by which the thread-guides can be moved horizontally with respect to the winding-points. Further, the distance between the guide-rail and thread-eyes of the guides can easily be altered.

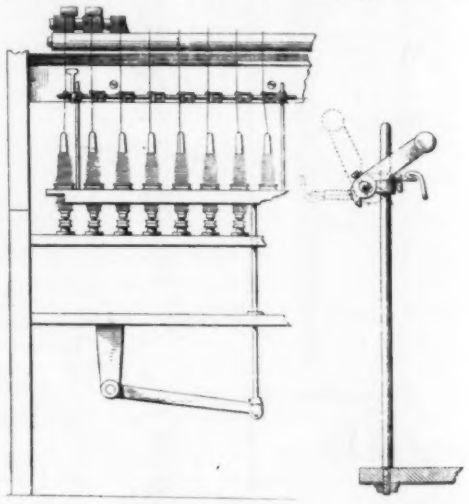


FIG. 1. FIG. 2.

The thread-guide can be individually turned and held out of the way when necessary for the removal of a cop from a spindle, an entire group of guides can simultaneously be turned back for the removal of a number of cops. The parts are so formed and assembled that the various adjustments can be made without interference with other parts and without breakage of the material operated upon by the machine.

Fig. 1 shows the attachment and part of the spinning frame. Fig. 2 shows the guide support.

Questions and Answers.

Under this head we undertake to answer, free of charge, to the best of our ability, any pertinent inquiry pertaining to textile matters received from any regular subscriber to the TEXTILE WORLD RECORD. Questions should be stated as briefly and concisely as possible. Inquiries pertaining to textile processes, machinery, improvements, methods of management, the markets, etc., are especially invited, as well as any legitimate discussion on the views expressed. All inquiries must be accompanied by the name of the person inquiring, not for publication, but as an evidence of good faith.

For reply to questions that are not of general interest to readers of textile journals, such as those relating to the composition of yarns, analysis of fabrics, etc., we will charge the enquirer with the cost of the investigation.

Water for Bleachery.

Editor Textile World Record:

How much water will it take to bleach and dye 15,000 pounds of yarn a week? We are erecting a gravity tank and want to know how large a pump we shall need. We are not sure whether a two-inch pipe from the gravity tank, leading to the bleachery, will be large enough, or if 100 gallons a minute would suffice for the ordinary run.

Spring (769).

One hundred gallons a minute would be sufficient for the ordinary run, but there will be times when this quantity will fall short. At one time when we were bleaching and dyeing warps we had a Davis pump throwing 114 gallons of water a minute; we had a storage tank of 2,000 gallons' capacity; we had a four-inch pipe leading from this tank into the dyehouse and we had two-inch risers leading into the dyeing machines. As a result of this arrangement we had plenty of water most of the time, but when we were doing a larger amount of work than usual there was a scarcity of water, which caused much delay, and much danger of tender yarn due to the lack of water in the washing of the bleached warps.

One hundred gallons a minute would certainly be sufficient for a dye and bleach plant of 15,000 pounds' weekly capacity if it could be contained in the storage reservoir, but there are times during the day, and perhaps several days during the week, when not more than one-half the amount of the pumping capacity will be used. The tank will be full and the water going to waste through the overflow pipe. Then again if there is a good deal of washing to be done on colors that need much water, the tank will be empty at night. In the morning several tubs have to be filled at once while the help stand around waiting to get to work, and many a good hour is wasted and inferior results obtained from lack of sufficient water. Some careless operative might leave a valve open during the noon hour, or at night, and again valuable time is lost while the tank is being filled.

We had exactly such an outfit as Spring is planning, but to rid ourselves of this repeated lack of water at critical times we have done away with the pump and storage tank system and are installing a gravity system pure and simple, our dyehouse being lower than our head of water. We have installed an eight-inch main feed pipe from the flume, and to each dyetub we have three-inch risers. It certainly makes one feel good to see how quickly that will fill a dyetub and the good results in washing, to say nothing of the saving in time. We are also getting much better results in our beaming room on the harsher colors, such as iron buff and cutch brown, since we installed the new system.

Spring is in doubt whether a two-inch pipe from the gravity pipe will be large enough. From my experience I should say that it is not large enough, and here comes up an entirely new question, that of the proper piping of a dyehouse for water and steam. The main pipe should be large enough to allow feed pipes into each tub. Suppose from a two-inch main there is a two-inch feed pipe and it is required to fill two or more tubs at the same time, we would be getting only one-half, one-third, or even one-fourth the capacity of the two-inch pipe, and would be losing time and possibly doing poor work. The main feed pipe should be large enough to fill all the branch pipes with a steady flow of water. If you put in a two-inch main and then attach ten or twelve two-inch pipes to it, don't wonder why you are not getting water enough from each feeder. I have seen three two-inch risers piped from one two-inch main and the piper wondered why the dyer kicked about not getting water enough.

This is also true of steam piping. I knew a mill where the dyehouse was a considerable distance from the boiler house. When the dyehouse was installed the pipe was large enough, but as the mill increased and also the output of the dyehouse, the steam pipe was not made any larger. The result was that the cost of labor was much increased and during the severe cold weather the men stood around till eight o'clock in the morning, waiting for their tubs to boil, and I have no doubt the dyer was asked why his labor cost so much a pound.

Too much cannot be said of the importance of a generous supply of good clean soft water in dyeing and bleaching, and the best mills are spending large sums of money on their water supply. One large mill in Massachusetts has a gravity filter covering the basement of a large building with pumps that throw five thousand gallons a minute. Two other mills in the same state have installed mechanical filter plants. The first mill has also built a special boiler house for its dyeing depart-

ment, as the mill boiler house was too far away from the dyehouse. Several years ago it was a common saying that anything was good enough for the dyehouse, but now all the up-to-date concerns are putting in the very best materials for the saving of labor and dyestuff, and there is no better means to that end than the installation of a good water supply.

Baumwolle.

Advertising Textile Goods.

Editor Textile World Record:

We have read with interest the article in your November issue, "Advertising Textile Goods," in which you outline the essential features and advantages of our process under the title of "Hand Stamps." In addition, in the final paragraph of the article under the title of "Labels," you refer to the process employed by the Bradford Dyers' Association and other leading British manufacturers as a distinct method of identification. As a matter of fact, the process used by the Bradford Dyers' Association, Yorkshire Worsted Association, and other leading groups of British textile manufacturers is the same as our own, the stamps being furnished partly by ourselves and partly by the only other manufacturer of stamps for this process. There are certain respects in which our product is much superior to the stamps of English manufacture, but the reference to this method under two paragraphs as though they were distinct may be misleading to some of your readers.

Kaumagraph Co.,
156 Fifth Ave., New York.

Chafed Piece Dyed Silk Fabrics.

Editor Textile World Record:

A question that we would like to see thrashed out is the cause and prevention of what is known as "chafe" on piece dyed all silk fabrics and piece dyed spun silk fabrics, notably crepe de chines. The goods in which we are specially interested are boiled off for 2 to 3 1/2 hours in a liquor which is kept constantly boiling and which is made of about 1/2 pound of soap for every pound of silk and 5 or 6 per cent. of sal soda based on the weight of the silk. This liquor is kept at a boil during the immersion of the silk, which is hung on sticks sometimes, and sometimes merely stirred around in the liquor. The goods are then washed in lukewarm water and dyed over reels.

Neun (770).

The chafe marks on the sample of goods submitted are caused by running too little water into the dyetub, presumably in filling up the silk to shade, as the silk is under shade. As a general rule the liquor is allowed to become cold gradually; then a small amount of clean water is left in the tub. The sample sent appears to have been treated in this way, as I understand the color was all on when the chafing took place. If the chafing had taken place during the dyeing operation the chafe marks would be much lighter in color. The remedy is to use a padding machine for filling the silk when it is not quite full enough; if this is impracticable, use the regular amount of water in the dye vat. This means a little more dyestuff, but it will pay the firm by having less seconds. Any practical dyer should know this, but it is often neglected. The same thing often happens on cotton and wool goods, as cotton is often filled up in the washer with hardly enough water to carry the goods around without dragging and chafing.

Arnim.

Analysis of Sized Cloths.

Editor Textile World Record:

I would like to have you explain how the spun count and proportions of warp and filling are determined from a heavily sized or loaded sample of cotton goods. The method I have been using involves cutting two samples; one of them, one-tenth of a yard square, is for determining the proportions of cotton and size by weighing before and after boiling-out; the other, one inch wide and eighteen inches long, is for determining the count of the filling. Then there is a long calculation to determine the weight and count of the twist (warp). This method also involves the use of a special yarn scale that indicates the weight of 100 yards in pounds when the first sample is hung on the hook. What I want is to find a simpler method that can be used with the ordinary balance.

Scarbohnen (771).

The size (1/100 square yard) of the sample used by "Scarbohnen" is well adapted for the test, but his subsequent operations are complicated and laborious. The use of a special scale is objectionable. While supposed to save labor it in reality increases it besides concealing the reason for the different steps in the operation. Moreover one accustomed to rely on a special scale is practically helpless if he happens to be without it when called upon to make the test. An ordinary balance is much better than an automatic device, and has the additional advantage of being generally accessible.

A better way is to weigh the sample of 1/100 square yard before and after scouring to determine the amount of sizing or loading material in the fabric. Then the warp and filling are raveled and weighed separately. From the data thus obtained the counts of warp and filling and weight of goods are readily calculated by methods explained in former issues of this journal.

A practical illustration will perhaps make this

reply to "Scarbohnen" clearer. A sample of cloth with an area of 1/100 square yard weighs 16.6 grains before scouring, and 12 grains after scouring and drying. The loss of 4.6 grains is all due to the size on the warp. After raveling the scoured sample the warp weighs 5.7 grains; the filling 6.3 grains. The warp take-up is estimated at 6 per cent.; the filling take-up, at 5 per cent. There are 64 threads of warp and 64 of filling per inch. Then: The standard sample for analysis is 1/300 square yard.

5.7 (gr.) ÷ 3 = 1.9 grains warp.
6.3 (gr.) ÷ 3 = 2.1 grains filling.

Standard sample 4. grains.
64 (ends) ÷ 1.9 (gr.) = 33.6
33.6 ÷ .94 (100% — 6%) = No. 35.7 cotton warp.
64 (ends) ÷ 2.1 (gr.) = 30.5
30.5 ÷ .95 (100% — 5%) = No. 32. cotton filling.
16.6 (gr.) ÷ 3 = 5.5 gr. standard sample, finished.
5.5 (gr.) × 36 (in.) = 198
840 ÷ 198 = 4 1/4 yards per pound finished.

The weighting of the warp by size is thus calculated:

4.6 (gr.) ÷ 5.7 (gr.) = 81 per cent.

The reasons for most of these operations are self-evident. A reference to former Questions and Answers, particularly No. 64 in March issue from "Gera" will clear up any points that may be in doubt.

Analysis of Shoe Strings.

Editor Textile World Record:

We would like to know what the sizes of yarn in the enclosed samples of shoe strings are. Please state how the size of yarn in braid is determined. Scattergood (773).

The two samples are made of polished yarn. Upon scouring them in a hot alkali solution there is a loss of 9 per cent., due to the removal of finishing material. The spun counts of the yarn are found as follows:

Sample No. 1: A piece of the finished braid 4 inches long weighs 4.8 grains. There are 88 ends of single yarn in the braid. Upon measuring separately several ends pulled from the 4-inch sample the length of each is found to be 5 3/16 inches. Then:

88 (ends) × 5 3/16 (inches) = 456 inches yarn in sample.
456 (in.) ÷ 4.8 (grains) = 95 inches per grain.
95 (in. per gr.) ÷ 4.32 (in.) = No. 22 cotton. finished.
22 (cott. No.) ÷ .91 (100% — 9%) = No. 24. spun count.

The analysis of sample No. 2 by the same method gives the following result:

44 ends 2/23 cotton, spun count.

The length, 4.32 inches, in above calculation, is used because the cotton count indicates the number of 840-yard lengths per pound, which is equivalent to the number of 4.32-inch lengths per grain.

Moisture in Worsted Yarn.

Editor Textile World Record:

I note what you say in your November issue on this subject and yet feel that more can be said. Take a shipment we have just received of worsted yarn. It went to the Bradford conditioning house as 12,226 pounds. The weight given by the conditioning house was 12,533 1/2 pounds and it weighed on our scales 12,260 pounds in the original bales. Now here is a loss to us of 273 1/2 pounds in yarn (or something else), and a gain to the maker of the yarn of $141.45 for goods he did not deliver.

It appears to me that though a method may have been in use for some years and even be accepted generally, that is no reason why an improvement may not be introduced. As example, take the "London Clause" on goods entering London by boat. I never heard a satisfacory reason for it and I now believe it is cut out. Why cannot worsted yarn be sold at a "bone-dry" price? If it is bone-dry in Bradford it will be the same weight as bone-dry in Canada or Mexico. Another reason which comes into consideration. bone-dry will be a clean yarn, and so the buyer is not paying for any too much oil or dirt. Again, we have some yarns of an open nature that absorb a much greater percentage of moisture than another yarn of an equal weight when dry. That is especially true of lofty yarns.

Where does the agent come in? We have seen yarns stored in cellars in this country weigh more than the conditioning papers allowed and in comparison with yarns made on this side—count, stock, and fabrication being equal—were dearer at 41 cents than domestic at 46 cents a pound. Does anything suggest itself from these points?

Lachine Rapids (776).

"Lachine Rapids" is mistaken. He asks: "Why cannot worsted yarn be sold at a 'bone-dry' price?" It is in fact sold on a bone-dry basis when sold by conditioned weight. Conditioned weight of worsted yarn is bone-dry weight plus 18 1/4 per cent. The worsted yarn trade of Europe is based on this standard and prices have become adjusted to it under the law of supply and demand. Let us take the shipment just received by "Lachine Rapids" and assume for illustration the purchase price to have been 60 cents a pound, conditioned weight. The conditioned weight is 12,533 1/2 pounds, which represents a bone-dry weight of 100 per cent. plus 18 1/4 per cent.; or a bone-dry weight of 10,600 pounds plus 1,933 1/2 pounds. The market price by conditioned weight being 60 cents a pound con-

ditioned weight, the entire shipment cost $7,520.10. This is equal to 70.94 cents a pound, bone-dry weight. That is the bone-dry price for the lot established by supply and demand, and is the same as 60 cents a pound, conditioned weight, based on a regain of 18 1/4 per cent.

This shipment weighed 12,226 pounds in Bradford. The bone-dry weight was, however, 10,600 pounds; consequently the actual regain on Bradford was 15 3/10 per cent., the lot containing 10,600 pounds of bone-dry yarn and 1,626 pounds of water. But worsted prices are not based on a regain of 15 3/10 per cent. If they had been, supply and demand would have adjusted the price per pound so as to make the total value of the shipment $7,520.10, the same as it is now. The price per pound, Bradford weight, would then have been 61.59 cents, making the 12,226 pounds amount to $7,520.10.

So with the Canadian weight of 12,260 pounds. The bone-dry weight in Canada is 10,600 pounds, the same as in Bradford. The actual moisture in Canada was, however, slightly greater, the bone-dry weight being 10,600 pounds, the actual moisture 1,660 pounds, an actual regain of 15 7/10 per cent. The total value of the shipment, based on first cost, remained the same, $7,520.10, equal to 70.94 cents a pound, bone-dry, or 61.34 cents a pound, Canadian weight.

If "Lachine Rapids" should insist on buying directly by bone-dry weight his compatriots in Bradford could easily accommodate him by charging 70.94 cents a pound bone-dry, where they now charge 60 cents, conditioned. Or if he should insist on buying by actual Bradford weight they could as easily accommodate him by charging 61.59 cents a pound, Bradford weight. In the former case "Lachine Rapids" would get 1,626 pounds more in Canada than he paid for; in the latter case, 34 pounds more than he paid for. In either case he would have to reduce his bank account by exactly the same amount, $7,520.10, in order to cover the first cost, as he has now when he is receiving 273 1/2 pounds less than he has paid for by the pound.

No one standard of regain would agree with the varying degrees of regain at different times and in different places. The worsted trade has adopted 18 1/4 per cent. for worsted yarn and prices have been adjusted to it by supply and demand. It would not improve anything to change it as prices would then go up or down to conform to the change. Then why not leave it alone and avoid the endless confusion and fraud that would result from trying to change it?

We wonder if we have convinced "Lachine Rapids." If not, then we suggest this idea to him: When he buys worsted yarn by conditioned weight he is paying for 13.53 ounces, bone-dry, the price that is charged to him for what is called a pound, conditioned weight; 13.53 ounces is 100 per cent.; 2.47 ounces is 18 1/4 per cent.; 16 ounces is 1.18 1/4 per cent.; 13.53 ounces is a bone-dry pound of conditioned worsted.

While the particular standard adopted for conditioning makes no difference to the buyer and seller as long as it is agreed upon, yet it is very desirable that the variation in the actual regain in the different parts of America should be determined. With a view of getting this done we have suggested to the National Bureau of Standards at Washington that they take up this work. We have received a favorable response from the director who states that the matter is receiving his attention and that the work will be taken up at the earliest opportunity. We would suggest to "Lachine Rapids" that he use his influence to get the Canadian authorities to engage in the same work in order that as wide a territory as possible be covered by the official American tests.

Carding Cotton Mixes.

Editor Textile World Record:

I am having trouble carding cotton mixes. The cotton is fairly well matted; the picker does not do very good work and neppy yarn is the result. We have an old wooden frame card and lately when we moved from one floor to another the card was so racked and worn that we could not set it close enough to take out the neps. What would be the best method of setting and to what size gauge? It is set to 29 now. Where is the setting most liable to help and will the fancy help or cause the neps? We are now making 1 1/2 run yarn; about 1 1/2 draft on the spinning machine or about 48 inches of roving. The stock contains from 20 to 50 per cent. cotton. The ring doffers make about 14 turns a minute. Clinton (774).

If the card is in such shape as Clinton says it is the best thing to do is to open the window and throw it out. If the mixing picker is not doing good work, have the machine fixed so that it will. The mixing picker has nothing to do with making neps. Run the cotton and the stock that is mixed with it separately through the picker before mixing. I never set a card closer than 29 gauge on any kind of stock. If Clinton can set the stock with a 29 gauge without having it strike, the card is all right and the fault must be somewhere else, probably in the fancy. Set the fancy so you can just hear it on each side; then set both sides firmly into the cylinder. See that the stripper belt is tight; run the first breaker doffer faster so as to get the stock out of the card quicker. Speed the ring doffers up to 18 or 20 turns and the condenser accordingly. The roving is apparently about right.

Sam Driver.

KNITTING DEPARTMENT.

For Knitting Mill Machinery, Equipment and Supplies, see pages 236 to 253. Also Buyers' Index.

THE KNIT GOODS SITUATION.

Jobbers report that the sales on all lines of spring underwear have been made in large volumes and up to date they have on their books more orders for spring delivery than ever before.

A very few manufacturers are in a position to accept any additional orders for light weight goods and those only for late delivery, say June and July. Advanced prices are being asked on all lines that manufacturers are in a position to take any orders on.

Men's ribbed goods sold early at $3.50 and are now being held at $3.62 1/2 and $3.70. All lines of balbriggans show advances from 12 1/2c. to 25c. per dozen. Ladies' straight ribbed goods have advanced from 5 to 10 per cent. and shaped goods are practically out of the market.

Sleeveless shirts and knee drawers for both men and boys have been in great demand and many buyers have been obliged to change the orders originally placed for long sleeve shirts and ankle length drawers to the abbreviated garments.

The condition on fall lines during the first two weeks in November might have been termed, "fast and furious." A great many buyers came into the market and as one person expressed it, "bought themselves black in the face." It was necessary for one to watch his chance to get into any of the sales offices to be waited upon and as a consequence of this great influx of buyers, a number of mills were sold up very early.

Ladies' combed yarn ribbed goods were sold at practically last year's prices, namely, $3.50 to $3.62 1/2 for 7 3/4 to 8-pound goods, according to the trimming.

Men's ribbed goods and fleeces were sold at an advance of about 12 1/2c. per dozen over early prices of last year and while it would appear to a layman that the price on ladies' carded yarn goods should have been advanced, such was not the case.

There has been a combination formed of nearly all the New York State manufacturers of this class of goods for the purpose of correcting trade abuses and also to agree upon a price for 1907. Several meetings were held in New York City, but it was not until the meeting at Utica on November 6 that the following basis of selling was agreed upon:

Goods delivered in	Ordinary sizes 6 lb.	Ordinary sizes 7 lb.	Extra size 7 lb.
January, February, March, April	1.95	2.15	2.20
May, June, July, August, September	2.00	2.20	2.25

The above are prices for vests with cotton edging, mercerized tape, pearl buttons, and for pants made with side open bands. Terms on all to be met 10 days, F. O. B. mill, and 8-16-16 scale of sizes to prevail. Where sizes 5 and 6 are wanted in equal quantities, the price to be advanced 5c. per dozen and for all size 6 an advance of 10c. per dozen. Bleached goods to be sold at 10c. per dozen more than the price for peeler.

It is said that a large business was done by the Royal Gem Mills on Monday before the meeting at 2 1/2c. per dozen less than above prices, but it is believed that in the main, the agreement is being carried out.

Another meeting was held by a number of manufacturers of boys' fleeced shirts and drawers and one good thing accomplished at this meeting was the putting of a rise and fall price on boys' fleeces. The price agreed upon was $1.67 1/2 for 6 1/2 pound garments on size 24 with a rise of 12 1/2c. and $1.80 for 7-pound garment on size 24 with the same rise. This represents an advance on the average from 5 to 7 1/2 per cent. over last year's opening prices. Children's ribbed goods to weigh 5 pounds on size 28 were opened generally at 75c., rise 25c. less 15

per cent. and children's hem tail flat fleeces at $1.00 for size 16 rise 25c., less 15 per cent. It is to be regretted that the manufacturers of children's fleeced goods did not come to a decision to change the rise and fall on children's fleeced goods. It is thought by a great many that 12 1/2c. per dozen would represent the actual rise and fall, better than 25c. and that to start this line at a higher price on the small sizes with a 12 1/2c. rise would be a much more satisfactory way to sell the goods. but owing to the fact that there had been considerable business taken on these lines, it was thought best to let the matter rest until another season.

The Avalon Knitwear Company are getting a mill into shape to make a patented "duo-fold" line of men's and women's goods. This is described as a double thickness of fabric with two cloths knit or tied together by stitches or loops about every half inch apart. It is understood that they expect to make the fabric in women's goods at about $3.75 and men's at about $7.50 to sell to the jobbing trade and to make a line at from $9.00 to $60.00 per dozen to be sold through Robischon, Peck & Co. to the retail trade. It is claimed it will be possible to put a long, heavy fleecing on the inside fabric similar to the patented plush back ribs now being made by the Utica Knitting Company. It will, of course, be possible to make a variety of combinations with the outside cloth of one material and the inner cloth of another and by combining silk, linen, mercerized cotton and wool in the different combinations, a very attractive line may be looked for.

HOSIERY.

It cannot be said that there has been as much enthusiasm shown among buyers of hosiery as among underwear buyers in the matter of placing orders for the fall of 1907. Prices are as low and in a great many cases lower than are warranted by the condition of the raw materials; yet buyers are holding off and do not show their disposition to place fall orders that many manufacturers looked for in the month of October.

Very few lines of worsted and wool lines are yet sold up, which is rather disappointing to some, as it was the impression of a number of salesmen that this would be a short selling season. To account for this, one may go carefully over the existing conditions and find for one thing that wool and worsted goods have not sold as readily this season as in former years. Again, the qualities shown at so-called limit prices do not look as good as buyers would like to have them and there seems to be a feeling among them that it cannot be any worse later and they appear to be in no hurry to operate. On the other hand, manufacturers say prices can be no lower and there are no evidences yet of manufacturers forcing the trade by making concessions of any kind from their opening prices.

Considerable business is being done on worsted finished hose at about $1.50 and on half hose at about $1.00. In some quarters this is called fake-worsted and as we understand it, is cotton spun on wool machinery.

Manufacturers have been taxed to their utmost to produce lines to meet buyers' ideas of fixed-limit prices and as a consequence, have produced some things that are "not what they seem," the true character of which will be apparent to the consumer who tries to buy a pair of wool hose or half hose at 25c.

In regard to hosiery styles for spring, there is little to be said in addition to what has already been written. Brown, tan and grey appear to be in the lead of solid color range. There is also an active demand for laces and gauzes which in a great many instances cannot be supplied. Embroidered goods are fairly active.

Chemnitz reports call attention to the scarcity of many lines and add that the condition cannot be improved upon just now for the reason that a new law in Germany prohibits the employing of children under 12 years of age in the hosiery mills. This is said to be due to the fact that there has been considerable damage done to children's eyesight from working on embroidered goods.

CHEMNITZ REPORT.

A number of buyers are in town at present, trying to secure goods for early deliveries, but they are having a very hard time of it, as nearly all makers are sold up for many months to come, and before May there is not much to be had in most classes of ladies'

hosiery, especially in the fine gauge goods. The market is sold up, although the production is quite a bit larger than it has ever been before. Most of these goods are now beyond the old limit prices, so that lower grades made from inferior yarns have to be substituted, but even these are eagerly bought as long as they can be had within a reasonable time.

The demand for lace hose is still rather weak, especially in the lower and medium grades, and buyers are holding back fearing that the price on these may collapse. During the last two or three weeks, strikes were called in several of the largest lace hose mills, but now they are all running again, as the manufacturers allowed the demands of the working people. Other markets are still taking lace goods freely, so that up to now, stocks have not accumulated, and prices are still firm.

Many of the lace machines are now running on plain goods, so that the production has been cut down and it is not near as large as last year. Should a sudden demand spring up, it will take a long time to fill large orders, because the machines have to be changed.

The demand for split foot hose is as large as ever, and far greater than the production. In low priced goods, hardly anything is in the market and for regular orders, time for delivery must be given way into next year.

Black is still leading, while white has fallen off of late and while a number of houses have dropped greys almost entirely, others are ordering it in the light pearl shades in liberal quantities.

Infants' socks are another article that has been bought this year more than for many seasons, mostly with small fancy effects in the tops, or embroidered, or with hairline stripes. These are used to a great extent in white, pink and sky.

In men's half hose, embroidered and striped goods are taken freely and all importers are taking up large lines of them. In these colored grounds are good sellers. Plaid effects are also bought, but only in modest combinations.

In gloves the market is in the same excited state as it has been all the season. The demand for long gloves has not fallen off in the least, and every week large orders have to be refused by the makers, who are unable to procure cloth enough. Wages in the glove districts are double what they were a year ago, but even at these almost fancy prices, any lot that can be had finds a buyer readily. Of late, the demand has been on taffeta and Berlin long gloves and nearly all importers are anxious to place more orders on these, but find it very difficult to find makers who are open for any more.

At this time of the year, usually the fall lines have all been shipped, but this year most of the glove makers have not even got them ready, and it will take nearly all of this month to complete them. Many are not going to sell any fall goods at all, as they will be busy on summer goods until next summer season opens up again. No doubt, cashmerette gloves will be the leading article for next winter and while most of them are ordered with two clasps, a demand has sprung up of late for one clasp goods. Especially in the finer grades single clasp goods seem to be preferred.

While up to now, American buyers have not placed many orders on knit gloves or ringwoods, makers of these are receiving so many orders from other markets that soon they will be busy for the early part of the season, so that if the American trade should take them later on, they will again have trouble to get them shipped on time.

Prices on all kinds of gloves, cotton as well as woolen goods, are a great deal higher than last year and many styles are thrown out of the range of prices in which they were last year. The substitutes which have been brought out to take their place are a great deal inferior and it will make it hard for buyers to make up their minds that these are the best they shall be able to procure.

Of the 23 million dollars' worth of merchandise sent from Porto Rico in the fiscal year ending June 30, 1906, 19 million dollars' worth were sent to the United States, and about 19 million dollars' worth of merchandise went from the United States to the island.

RAGGED EDGES ON HOSIERY.

Editor Textile World Record:

Having read with great interest the articles regarding ragged edges on rib tops in your November issue, I desire to submit some samples, mailed under separate cover, for the information of your correspondents, Leonard, Dan Bucklin, Henry Nevis, H. W. Crowe and Alfred Gould. The ribbed top shown in Fig. 1 was made on 152 needles, 4-inch cylinder, of 2/18s yarn, on a single system Schubert & Salzer circular ribber, while the one shown in Fig. 2, was made on 194 needles, 4-inch cylinder, of 3/40s yarn, double system Schubert & Salzer ribber; by this double system a genuine double welt, similar to the rib tops used on full-fashioned hose, is produced. You will observe that these rib tops are knit with a dividing thread, so that cutting is unnecessary and the very objectionable ragged edge is entirely obviated. These machines have been in successful use in Europe for several years.

Otto Walther,
507 Bourse Bldg., Philadelphia, Pa.

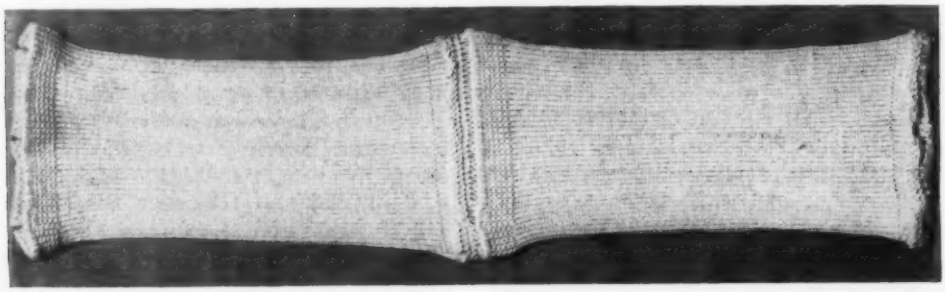


FIG. 1.

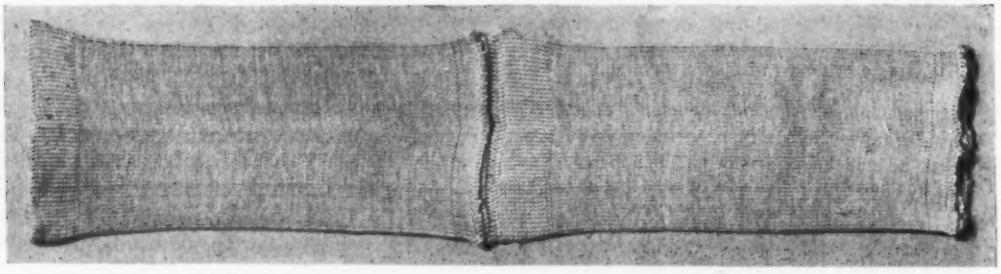


FIG. 2.

FINISHING WOMEN'S AND CHILDREN'S RIBBED UNDERWEAR.

BY FRANK J. ROBINSON.

The term finishing as applied to ribbed underwear comprises those operations of manufacture through which the goods go after leaving the cutting room, but is more especially applied to the sewing machine room, which is frequently called the finishing department. This is one of the most important and difficult branches of the knitting industry as few men can master all the different kinds of sewing machines used in that department, including crochet overseam, twin and three-needle seamers, shell or scallop, pillar bar machines, lace or insertion machines, lock stitch, chain, button hole and button sewing machines, all running at a very high speed. In view of the high speed the first duty of the finisher is to impress on the operators the absolute necessity for careful oiling of every part of the machines, seeing that the oil holes are kept free from dirt so that the oil will lubricate every bearing and revolving part of the machine.

When the garments come from the cutting room the first operation is to put an artificial selvage on the edges. This operation is called crocheting and the different makes of lock stitch sewing machines are used for the purpose. There are several of these machines on the market and each has its special features but in all of them the proper regulating of the tension is very important; green hands will cause considerable trouble if they attempt to change it. The artificial selvage should lay flat with a smooth finish on the edge. The feed should be adjusted to match the gauge of the goods, a rough, uneven or round crochet will spoil the appearance of an otherwise perfect garment. On machines using a trimmer dull knives will cause drop stitches besides making the edges look rough. The size and twist of the thread used also have an important bearing on the finish. The number recommended by the builders of the machine should be used whenever possible. All these machines, and in fact nearly all the machines used in the finishing room, are made of hardened steel ground to fit well, and if properly oiled will run for a long time without getting out of order; as a general rule improper working is caused by wear or lost motion. This is especially true of the feeder, throat plate, looper and presser foot. These four parts should always be kept in stock, as they may be needed at any time. When the feeder is dull it is poor policy to raise it higher and put more pressure on the presser foot; this causes both parts to wear out quicker besides putting an extra strain on the machine. It is much cheaper and better to put on a new one or take the temper out of the dull one, sharpen it and harden it afterwards. If the loopers are sprung badly or worn the best and quickest way is to replace them with new ones. A worn out throat plate will never work satisfactorily either.

The goods after being crocheted either go to the seamers, to the shell and scallop machines, or to the bar machines, as the case may be. A seaming machine that is widely used is the Union Special elastic stitch machine with the D trimmer. One of these trimmers properly adjusted will run for weeks without grinding. It is used for putting in gussets, sewing in sleeves and assembling the different parts of a garment wherever an elastic stitch is required so that the stitching will not break when the goods are stretched.

The overseamer, or felling machine, is a two-needle machine used for covering the rough seam with a cross thread, at the same time flattening it, the covering thread being of soft hosiery yarn. When the garments are finished with hand crocheting around the necks and front, the garments are sent out before sewing the sleeves in, as this would make them unnecessarily cumbersome to handle. As hand crochet is quite expensive it is often found expedient to reduce the cost by going around the edges with the large scallop or the small shell on the machine and then have them finished by hand, using the same yarn for both operations. In some instances this increases the attractiveness of the finish.

On cheap goods where the cost of hand work is prohibitive, and in all goods where tapes or ribbons are to be inserted, the pillar bar machine is used instead of the overseamer as formerly. On high grade goods when used with silk or mercerized thread, it is very difficult to tell at first sight which is hand work and which is done by machine. This machine can be used as a small or a large bar and also with double bars, and as a scallop machine for finishing fronts. It requires the making of a chain on a special machine; by using one or more chains on the bar fingers this makes possible a great variety of effects. It is a most exacting machine to adjust. Setting the chain fingers is a delicate operation. It is best to set the bar fingers first, taking care that the tensions on the bars are even; if the bar is tight at the top it will spoil the finish when the bar is set. The scallop must be set so that the fingers will not strike one another. It takes a lot of practice and considerable time to do this.

On heavy garments the necks and fronts are generally finished with a scallop, putting in two rows of shell on the front, after which the sleeves are put in and the garment overseamed. When laces and insertions are used the machine best adapted for that purpose is a two-needle single hook machine, having

two little fingers working alternately, first taking the thread from one needle and carrying it as a loop to the other, where it is sewed on, neatly covering the edge of the lace.

After these operations the goods are ready for the lock stitch machines; for this the Willcox & Gibbs are widely used as they run fast and noiselessly. This is the real finishing department. Though it has for a long time been the custom to use bands of cambric or muslin for finishing the fronts, small bands knit on very small circular machines are now used. These bands being elastic, stretch with the garment, and as they are knit of the same kind of yarn they match much better. Whatever material is used great care must be taken that the work is done properly, using as fine a stitch and as near the edge as practicable, also following the wales of the garment so that the band will not seem to have been put on crooked. After the stay bands are put in the garments are ready for the button hole machines. The latest and newest are less complicated, are built stronger and will stand a higher speed, some of them making as many as three thousand button holes in a day. Goods finished with bar or edging now go to the tapers, and in small country places this department is generally the starting place for female operatives.

In the next operation, pressing, the ribbed goods are generally passed through the mangle machine, care being taken that they are fed to the machine so they will not get wrinkled or creased. They are next examined carefully, the imperfect ones sorted out, those that can be mended going to the menders and the seconds put to one side. It is not advisable to employ very young girls in this work as they are apt to be careless and pass imperfections. The goods are then folded and boxed, and the style, size and quantity plainly marked on each box. The goods are then put on the shelves until time to pack and ship them.

In manufactured cottons China is by far the largest customer of the United States, purchasing 30 million dollars' worth for the fiscal year ending June 30, 1906.

RIB TOPS ON HOSIERY.

New York, November 26, 1906.

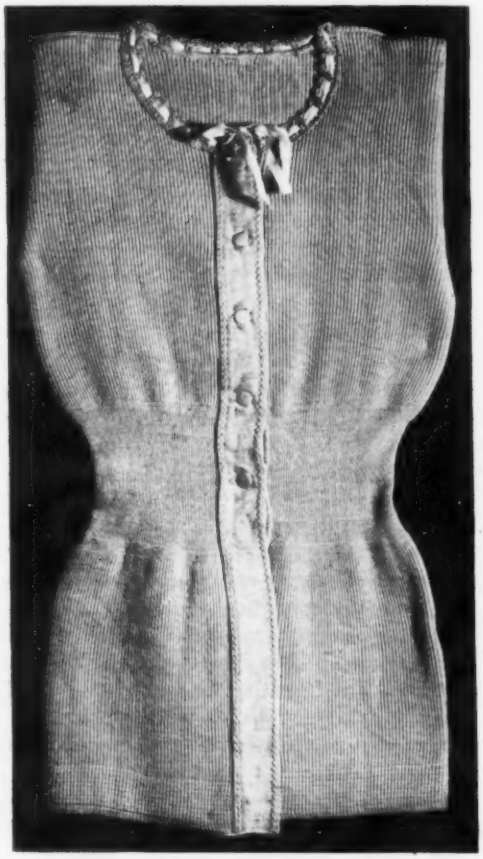
Editor Textile World Record:

The beginning and the end of a stocking are the two points at which most trouble arises for the manufacturer and salesman. The article entitled "Ragged Edges on Hosiery" in your last issue gives an excellent idea of the difficulties in making a good edge on the rib top. I am confident that the article has been read with great interest by all interested in the knit goods trade. The conclusions to be drawn from the various opinions expressed there may be summed up as follows: A ragged edge on circular rib tops cannot be greatly improved by the best finisher, while the best welt hitherto made on a circular machine can be spoiled by a careless boarder or former. The remedy for the difficulty consists in making a perfect double welt, which cannot be spoiled while the knitted goods are passing through the various processes of bleaching, dyeing, oxidizing, steaming, boarding and pressing.

Last summer while strolling through the Exposition at Milan, Italy, I noticed a flat knitting machine built on a new principle and producing a perfect rib top similar to the product of either latch or spring needle machines. On investigation I found that the success of the machine was due to the use of two feeds on the ribber together with automatic cam changes for the circular as well as for the dial cams. The machine is driven by a chain and all the parts are of the most approved design. There is no difficulty in cutting one rib top from another as one set of cams throws off all stitches in the dial needles, forming a neat separation roll which gives plenty of space between the welt and the next course for the free use of the automatic cutter.

A large machine has been built on the same principle for the manufacture of underwear. Well shaped garments can be made on it in various stitches and automatic changes are made from 1 and 1 rib to half cardigan (royal rib) as well as full cardigan. The welt is formed in about the same way as on a cuff. The accompanying illustration

shows a ladies' vest made on this machine and fashioned by a change of stitches. It will be of special interest to hosiery manufacturers to know that as good a welt can be made on a 2 and 2 rib leg as with a 1 and 1 stitch and that the racking motion has been applied to the machine.



LADIES' VEST MADE BY A NEW PROCESS.

I have secured the American agency for this machine and shall be pleased to show samples of the work to any one interested and give further information regarding it.

The Grosser Knitting Machine Co.
Max Nydegger, American Agent, 260 West Broadway, NewYork.

The value of the exports of wool from New Zealand is estimated at 20 million dollars annually.

TRANSFERRING DEVICE FOR KNITTING MACHINES.

A method of transferring stitches on a knitting machine so as to change from rib to plain knitting without dropping stitches, has recently been patented in this country and is described as follows:

Fig. 1 shows the fixed cylinder of a machine having the usual vertically-guided needles, w, which are vertically reciprocated by means of cams mounted upon a cylinder-cam box, 2, which is mounted upon a bevel-wheel, 3, turning in suitable bearings in the bed-plate, 4, and having rotary movement imparted to it in a manner customary in machines of this type.

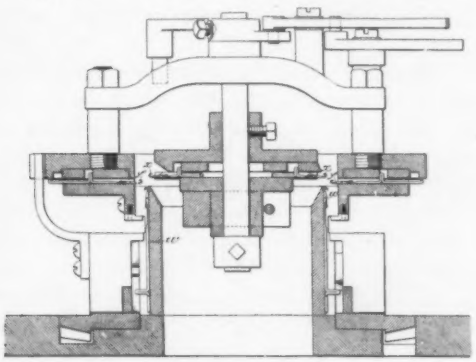


FIG. 1.

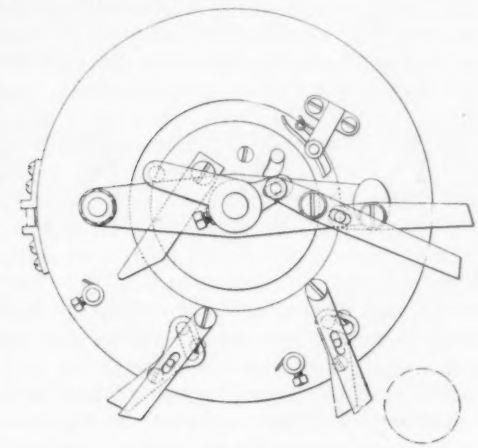
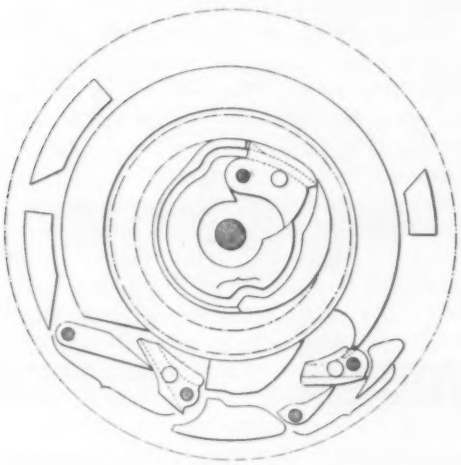


FIG. 2.

Fig. 2 is a top view of the machine. Fig. 3 shows the dial cams, also the outer cams for operating the transfer needles. Figs. 4

and 5 show the cams of the cylinder-cam box. Fig. 6 shows the relative positions of the three sets of needles. Figs. 7 to 12 illustrate the operation of transferring a stitch from a dial-needle to a cylinder needle of the machine.

FIG. 3.



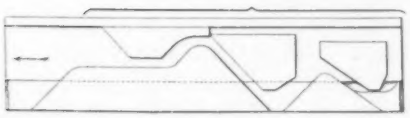


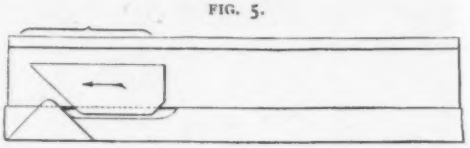
FIG. 4.

Centrally disposed within the cylinder is a needle-dial, carrying the horizontally-guided dial-needles, which are radially reciprocated by means of cams on the under side of a dial-cam box, the latter being secured to a stem or spindle, depending from a yoke or arch, which is rotated in unison with the dial-cam box.

The needle-dial has a depending hub which is supported upon a collar at the lower end of the stem or spindle, suitable means being provided for preventing rotation of the needle-dial independently of the needle-cylinder.

Surrounding and secured to the upper portion of the needle-cylinder is an annular needle-ring, which is grooved for the reception and guidance of a series of horizontally-guided needles, which are reciprocated by means of cams on the under side of an annular cam-ring, which is supported vertically on the needle-ring, has studs, supporting the arch or yoke, and is driven in unison with the cylinder-cam box by means of an arm on the latter engaging with lugs or ears projecting from the cam-ring.

FIG. 5.



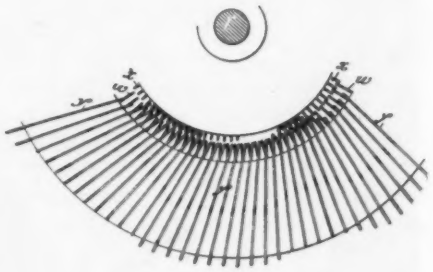


FIG. 6.

In the ordinary operation of the machine the dial-cam plate bears such relation to the cylinder-cam box that both the dial-needles and the cylinder-needles will be projected at the yarn-guide, and will both receive yarn from the same in order to produce ribbed knitted fabric in the ordinary way. During this operation the swinging cams of the two sets of cams of the cam-ring are retracted, so as to retain the needles in the retracted position. When it is desired to effect transfer of stitches from the dial-needles to the cylinder-needles in changing from rib-knitting to plain knitting, however, the dial-cam plate is moved backwards to a limited extent by a

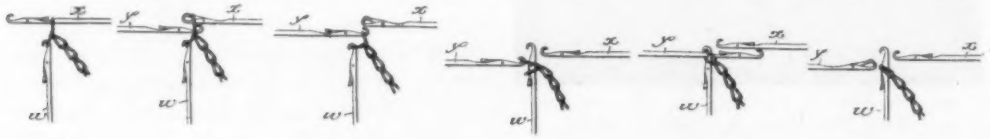


FIG. 7. FIG. 8. FIG. 9. FIG. 10. FIG. 11. FIG. 12

lever, until the arm comes into contact with one of the posts. As a consequence of this the dial-needles will not be projected so as to receive yarn from the guide, but will be fully projected at a point in the rear of said guide. At the same time that this operation is performed the swinging cams are moved so as to put the needles into operation, the result being that indicated in Figs. 7 to 12 of the drawings. When the dial-needle is fully projected, it will slip its stitch back of the latch, as shown in Fig. 7, and when retracted will close the latch and cause the stitch to ride up on the same, as shown in Fig. 8. When in this position, a needle is projected so as to enter the stitch as shown in Fig. 8, and the dial-needle, x, is then retracted by the cams so as to cast its stitch, which falls into the hook of the needle, y, as shown in Fig. 9.

The needle is then retracted, so as to draw the stitch over the top of the adjoining cylinder-needle, w, this being the purpose of the angular arrangement of the needles, y, for as the dial-needles and the cylinder-needles alternate with each other or occupy different vertical planes, some lateral deflection of the stitch is necessary in order to bring it into the plane of the cylinder-needle. As soon as the needle, y, has been retracted the cylinder-needle, x, is raised by the cams so as to enter the stitch carried by the needle, y, as shown in Fig. 10, and is then depressed, as shown in Fig. 11.

Meantime needle, y, has been fully projected by the cams, so as to slip the stitch back of its latch, and it is then retracted so as to cast the stitch on to the cylinder-needle, as shown in Fig. 12. These operations are repeated for each of the dial and cylinder needles, so that at one rotation of the machine all the stitches will be transferred from the dial-needles to the cylinder-needles.

A statement by the Bureau of Statistics gives the aggregate imports of the United States for the year ending June 30, 1906, as $1,226,615,379, a gain of $109,102,308 over the preceding year. The exports are given as $1,743,763,612, an increase of $225,201,946 over 1905.

A KNITTING STOP MOTION.

This device differs from the ordinary stop motion by which the machine is stopped on the breaking of the yarn; this device, which has recently been patented in the United States, is intended to affect only the feeder where the break occurs. The stop-motion is described by the inventor as follows: The main object of the invention is to guard against the occurrence of press-offs or gaps in the work.

In ordinary stop-motions, the breakage of yarn causes the stoppage of the machine; but this takes an appreciable time to act, and a considerable amount of work is spoiled, and a very large number of needles may become unthreaded before the stop-action can operate, and the machine may be seriously damaged. According to the present invention, however, it is only the parts appertaining to the particular feeder where the break has occurred that are affected, the action of the improved safety device being such that the cams no longer lift the needles when passing this feeder, and the said needles simply remain idle without losing their loops. In fact, they carry the loops from the previous feeder along with them until they reach the next feeder, whose yarn is unbroken, whereupon they operate as usual.

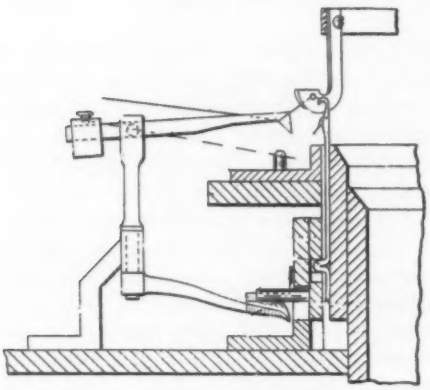
Hence there is practically no interruption in the continuity of the knitting—that is to say, in the fabric itself—the only effect of a breakage (or breakages) being that one (or more, as the case may be) thread less is fed to the work and a slight reduction of speed of output or manufacture results until the broken yarn is restored.

The principle on which the invention depends is the provision of an antipress-off device for putting the needle-cam at any particular feeder out of operation the instant a breakage of the yarn occurs at that feeder, or should a bobbin empty itself or an end come up which may have been broken in winding no hole or gap would occur. This cam then remains out of action until the yarn is rethreaded and the device is reset by the operator; but no press-off hole or gap or only a very small one occurs in the work, except, perhaps, in the extreme cases where the

break occurs close to the feeder-eye; even then the extent of the press-off is still only very small, being measured by the short interval required for the device to act, and the working of the machine is not interfered with, so that even if the attendant failed to notice the breakage no damage would result.

The cam may be made with its "lift" portion; i. e., that for raising the needles, as a

FIG. 1.



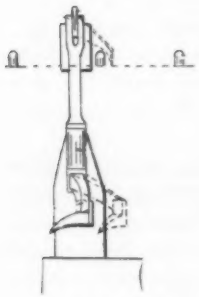


FIG. 2.

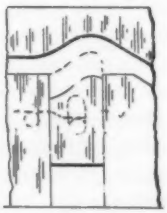


FIG. 3.

separate piece or slide and be provided with a pin extending through a slot in the cam-cylinder. This pin is normally raised to keep the cam in the working position by a wedge-shaped piece or head at the end of a swiveling arm. The arm extends from a vertical axle, which also carries at its upper end a counterweighted lever or feeler normally kept raised by the yarn as it passes to the feeder.

In combination with this feeler-lever is a set of studs or projections on any convenient part of the machine, such part being so chosen that the projections revolve past the lever, or vice versa. Should the yarn break, the lever drops instantly and is struck by or strikes one of the studs or projections, thus moving the swiveling arm aside, so releasing the pin and allowing the cam-slide to drop out of action. After the yarn is replaced the attendant need only press the arm into position again, when the wedge-piece acts on the pin and again raises the lift cam or slide into action.

Fig. 1 is a side view of the feeler and swiveling arm and adjacent part of the knitting machine. Fig. 2 is a front view. Fig. 3 is a detail view showing how the cam is formed so that the lift portion can slide vertically and come into action or drop out of action.

Merino Hosiery.

Editor Textile World Record:

We find it easy to full woolen hosiery and get the goods lofty, but are unable to get the lofty feeling on merino goods. Can you offer any suggestions? Cork (735).

This question appeared in our September issue and the following additional reply has been received from a correspondent:

If Cork will turn the stockings wrong side out and run them through a fine fleecer to raise the nap a little on the inside of the hose, then turn back to the face side and run them through a brushing machine, he will get the required lofty feel, but it is almost impossible otherwise. I could judge better if I saw a sample of the goods, but nevertheless I know this to be the most practical way, as I had the same trouble years ago myself.

Mauch Chunk.

Finish on Hosiery.

Editor Textile World Record:

Kindly give me your criticism on the dye and finish of the sample enclosed. You will notice that there is a streak down the leg, caused probably by the lisling process, and which we are anxious to overcome. Is there any way to clean stockings, other than singeing, by which this streak on both sides of the rib top can be eliminated?

Powell (750).

From the sample submitted I should say that the dye is of poor penetration or is improperly applied, as the cut portion of the goods is lighter than the surface. The shade has a good bloomy overcast and is deep and jetty. The finish appears very good. In my opinion, the streak down the side of the leg is caused by lint collecting on the

inside of the stocking where it is folded during the dyeing process. This might be prevented, or minimized, by reversing the dyeing machinery in case a drum is used, also by shaking the goods out thoroughly between scouring and dyeing, and dyeing and finishing. It is very evident that the goods have been allowed to remain too long in one position at some part of the process.

Stockings can be cleaned by singeing or shearing, but I think it would be better to have the yarns gassed before knitting. Clean yarn will give the most satisfactory results from all standpoints.

Caroll Black.

Comparing the shade of the sample submitted with a dozen other blacks of as many manufacturers, I should say it looks thin and overcast; it has a violet shade. Its strength is very good, but it greens slightly with dilute hydrochloric acid. It does not crock, nor does it bleed in washing, and its shade is more bloomy after a soap wash. The lisle thread effect might be improved by a little longer lisling in the oxidizing cage. The streak probably shows more in the whole stocking than in the small sample submitted, but judging from my examination, which is handicapped by the smallness of the piece, I am inclined to think that the streak is a wrinkle or crease formed by the take-up rolls on the ribber. This could be determined better if I had the stocking in its unfinished state before me, but the streak being on both sides of the stocking tends to confirm my impression. The rolls being set tight squeeze the fabric together and cause a crease in each edge as it passes through, and this crease, in every case where there is a streak on the finished stocking, remains in the stocking throughout the various operations till it reaches the boarding room.

If the rolls are too tight they should be loosened a little. The stocking rib should be examined as it comes from the ribber and if the crease is formed there an effort should be made when the stocking is being turned or inspected not to allow the crease to remain in the edge of the stocking, as the dyeing operation has a tendency to set it. Under ordinary circumstances the lisling itself would not cause such a streak, but if the streak is already there at the edges when the goods enter the tom-tom, and again when they are extracted, the chances are that the crease will be pressed in. It can readily be seen that if the stockings remain creased on the edges when they are put into the oxidizing cage the edges will become worn by the friction and will naturally show up streaky. If the stockings could be boarded so that the streaks are along the edge of the board, of course they would not be so noticeable, but this could not be done unless the crease came in the right place every time.

The stockings should be shaken out thoroughly before they are put into the tom-tom and again before they are put into the cages. This would open them up so that the crease would not remain on the edge. If the stockings were bushed, on a machine bush, after they were dyed, in order to raise the nap a little over the entire face, it might cover the streak, but would spoil the lisle effect.

Jerome Hill.

Equipping a Knitting Mill.

Editor Textile World Record:

Please give a list of the machinery required for a knitting mill with a weekly capacity of 300 dozen of wool socks made on circular machines, eight needles to the inch. Bingham (754).

It is impossible to give the exact number of machines required for any given production, as much depends upon the particular grade of yarn used. With one grade nine dozen a day for each machine may be produced, while with another grade the production may drop to eight dozen. The following list, however, will give an idea of the average number of machines required for making half hose:

Two rib top machines.
Six knitting machines.
Two loopers.
One small winder.
One dozen each size hosiery boards.
One laundry machine.
One dry box.
One hand press.
Inspecting and folding tables.

In addition the necessary machine tools for repair work will be required. I have included two loopers, as one would produce but 35 dozen a day. The winder will be found a profitable machine as it pays to back wind woolen yarn from cone or cop to the bobbins. The yarn knits much better. The laundry machine may be used for both scouring and fulling. H. W. Crowe.

For a weekly capacity of 300 dozen of wool socks, I should say it would require:

Ten knitting machines, 4 inches in diameter, 100 needles.

Three ribbers, 4 1/2 inches in diameter, 50 by 50 needles.

Two loopers, 12 points to the inch.

One napping machine.

One cyclone dryer with a daily capacity of 75 dozen.

Five dozen boards of each size.

Gil Blas.

To turn out 300 dozen socks a week the following machinery will be required: 14 knitting machines; a winder to wind from the cops or skeins; two loopers; and a steam press. With American machinery the cost would not be so large as the automatic footers do not cost much more than half as much as the Spiers' machines (which I have used in England), and the former will turn out more work. There is this disadvantage, however, that it is necessary to have a rib top machine. This will not turn out so neat a welt nor make so good a job when the transferring is done. Any of the machines advertised in the Textile World Record will do this class of work and it is a matter of opinion which is the best. The American machinery confines one to plain half hose, while with the English machines either plain or rib leg and instep can be made. If such a plant could be run in connection with a mill making yarn it would be much more profitable than to buy the yarn.

My experience has been wholly on English and Canadian knitting machines, and I have obtained excellent results with the machines that I speak of. The English machine laid down in Canada costs about $300, but would be more in the United States on account of the higher duty.

I might also mention a machine made in Canada by Creelman Bros. This machine will do the same work as the Spiers machine, but the needles have to be changed by hand; the heel and toe are also turned by hand. This is what is called a core dial machine, the same needles being used in both dial and cylinder. When the 1 by 1 rib top has been made the cylinder band is thrown over a holder which allows the needles which are taken from the dial to be placed in the cylinder without doffing or transferring the stitch. There are a great many in use in Canada and they turn out some really good work and good operators can run off three to four dozen a day. I have seen them running 225 r. p. m. and the girls can turn the heel and toe as fast as the automatic machine. Sioux.

Recent Knitting Patents

KNITTED FABRIC. Ribbed. 832,506. Robert W. Scott, Philadelphia, Pa., assignor of one-half to Louis N. D. Williams, Ogontz, Pa.

KNITTING MACHINE Stop Motion. 832,513. Frank Taylor, Nottingham, England, assignor to the British Hosiery and Electrolytic Bleaching Co., London, England.

KNITTED FABRIC and Making Same. 830,373. Robert W. Scott, Leeds Point, N. J., assignor of one-half to Louis N. D. Williams, Ogontz, Pa.

KNITTED FABRIC and Mode of Making Same. 830,374. Robert W. Scott, Leeds Point, N. J., assignor of one-half to Louis N. D. Williams, Ogontz, Pa.

KNITTED WEB. 830,375. Robert W. Scott, Leeds Point, N. J., assignor of one-half to Louis N. D. Williams, Ogontz, Pa.

KNITTING MILL NEWS.

New Mills.

*Georgia, Dalton. Operations will be started about the first of January in the new plant of the Eagle Hosiery Mills, making ladies' black hem top hosiery. The plant will have output of about 125 to 150 dozen hose per day at start. They will increase to 300 dozen daily as soon as possible. Will use No. 16 yarn in the white and No. 40 splicing yarn.

*Georgia, Rockmart. The Rockmart Hosiery Mills have been incorporated with capital stock of $10,000 and will start work at once on erection of a new mill, which they propose having in operation by Feb., '07, making men's half hose. They will install 25 new knitting machines, operating by steam power. Jas. Long is president of the company; Jas. Heaton, treasurer; A. H. Graefer, secretary, and W. C. Curtis, superintendent. A dye house will also be equipped.

*Michigan, Middleville. The Thornapple Knitting Co., capitalized at $125,000, started operations in their new plant Oct. 15th. This plant is equipped with 18 latch needle, 12 spring needle and 25 sewing machines, making men's cotton and wool ribbed underwear.

*New York, Highland. The product of the Highland Knitting Mills, recently started here by J. H. Mueller, are sold through Wilfred Grey, 35 N. 9th St., Philadelphia. Plant is run on men's sweaters, coats and gloves.

New York, Utica. Preparations are under way by M. F. and P. J. Robischon to organize a stock company for manufacturing knit goods. Operations will start in the Blasier Bldg., where space has been leased, making men's ribbed cotton underwear. It is expected to begin operations by Dec. 15.

North Carolina, Tarboro. The Tarboro Knitting Mills have been incorporated with capital stock of $50,000 for making ladies' hosiery. Job Cobb is president of the company; Geo. Howard, treasurer and C. W. Jeffreys, agent and general manager. Plant is equipped with 74 knitting machines and 5 sewing machines. Product is sold direct.

*North Carolina, Zebulon. The Zebulon Hosiery Mills have been incorporated with capital stock of $8,000 for manufacturing seamless hose. Work is under way on erection of a new building, in which they will install 25 knitting machines at start. T. J. Horton is president of the company and superintendent and J. D. Horton, treasurer. A dye house will be operated in connection with the plant.

Nova Scotia, Glace Bay. A small knitting plant has been established at this place, with Frederick Ferguson, as manager. Plant is equipped with 5 knitting machines for making socks.

Pennsylvania, Berwick. A new plant has been started here by Robt. E. P. Sult, as the Berwick Hosiery Mills, making men's half hose and using cotton yarns, 12s, 14s, 50s, 75s. Product is sold through Ellis Bros., of Philadelphia. Equipment consists of 9 knitting machines.

Pennsylvania, Lebanon. It is reported Heister & Hirst, who recently sold their hosiery plant at Womelsdorf to William I. Dundore, have leased a large building at this place, where they will resume operations, making a finer grade of goods. It is expected to have the plant running by December 1.

*Pennsylvania, Oley. The Oley Knitting Mills, reported under Friedensburg, will start operations about Jan. 1st, in building which has been leased and remodeled. Misses' hosiery will be made. Operations will start with equipment of 20 knitting machines, using steam power. I. S. Stahr is president of the company; I. M. Bertolet, treasurer and F. L. Yoder, superintendent.

Pennsylvania, Philadelphia. A small knitting plant for the manufacture of cardigan jackets, sweaters, etc., is being operated by William Rapp at 1748 Fawn St.

*Pennsylvania, Philadelphia. Rowland Hunt's new full fashion knitting mill at Westmoreland and Collins Sts., is now in operation and turning out a line of women's full fashioned hosiery which is sold through Parks & Muckle of New York. The plant when fully equipped will contain 12 full fashion machines employing 60 hands. He is using combed Egyptian and mercerized yarns.

Pennsylvania, Reading. The Terry Fashioned Hosiery Co. has been newly incorporated and will be located in a new mill, 130 by 80 feet, under construction. Full fashioned half hose will be made.

*Pennsylvania, York Haven. Work has started remodeling building formerly used as a canning factory for a branch mill for the New Cumberland Knitting Co. It is expected that operations will be started about Jan. 1st, making half hose, with an equipment of 50 knitters, 12 loopers and 12 ribbers. All business is to be transacted at the New Cumberland office.

*Vermont, Northfield. Work has been started on erection of a new mill to be erected for the Vermont Hosiery & Machinery Co., successors to the Scott Stocking Mills (Bennington, Vt.). The plant at this place will be operated as a branch of the Bennington mill and will make men's cotton half hose. The company is capitalized at $200,000; Henry L. Field, president; F. W. Dutton, treasurer, and J. H. Frost, superintendent. A dye house will be attached.

*Washington, Seattle. The new plant of the Saxony Knit Goods Co., Inc., is located at 81 Marion St., where offices are also. This mill will start up Nov. 10th, on cardigan jackets, sweaters, jerseys, bathing suits, etc., with equipment of 14 full fashioned knitting machines and 7 sewing machines, using electric power. Will sell direct.

*Wisconsin, Hartford. The new knitting mill reported to be started at this place by Eastern capitalists will be known as the Alberta Mills. It is expected to have the plant running by spring.

Enlargements and Improvements.

Canada, Ontario, Alton. Several new knitting (Stafford & Holt) machines have been installed in the Beaver Mills. Early in the year a new 40 h. p. engine and 60 h. p. boiler was put in. This mill is now operated by both water and steam. Other machinery is expected to be installed.

Canada, Ontario, Alton. John M. Dods, proprietor of the Alton Knitting Mills, contemplates enlarging the mill in the near future, installing new carding and spinning machinery.

Canada, Ontario, Clinton. The Clinton Knitting Co., manufacturing plain and ribbed seamless hosiery in cotton, cashmere and worsted, has increased the production by installing 4 new Standard F. and 4 Paxton & O'Neil automatic knitters. A new singeing machine (Smith & Drum) has also been installed. Samuel Owen is president of this company; H. B. Combe, vice-president and treasurer; E. M. McLean, secretary and Geo. W. Sheely, superintendent.

Canada, Ontario, Walkerton. The Walkerton Hosiery Co. has increased the machinery by installing several new Excelsior automatic and Ruth ribbers.

Connecticut, Windsor Locks. Contract has been awarded for erection of an addition, 40 by 80 feet, 4 stories, brick, to the Medlicott Co.'s plant.

Delaware, Wilmington. The Delaware Hosiery Co., expects to occupy the new mill the early part of the coming year at which time the plant will be materially increased.

Georgia, Macon. The Southland Knitting Mills have issued bonds for $15,000 and will make some improvements to the plant.

Massachusetts, Pittsfield. Work will start soon on an addition to the D. M. Collins Company's mill, for storage purposes.

Michigan, Amazon. The Amazon Knitting Co., one of the largest manufacturers of children's and ladies' ribbed underwear in the West, are about to install machinery for the manufacture of their own trimmings. The company has placed an order for 12 or more double rib (warp) knitting machines with a manufacturer of this line of machinery in this city and expect to have them installed within a few months.

*Michigan, Vassar. The Vassar Knitting Mill, which recently installed machinery for making hosiery, is now in operation with a full force of operatives.

*Minnesota, Minneapolis. The new mill for the Northwestern Knitting Company has not yet been completed; the building will probably be under roof by Nov. 15, and the inside work completed the first of January. It is expected to have the new power house, under construction, equipped and in operation by Jan. 15.

Montana, Helena. The Montana Knitting Mills are considering putting up a mill to make wool yarn, and are desirous of getting information on the subject from machinery builders.

*New York, Albany. The Fuld & Hatch Knitting Co. is considering project of erecting a new

mill, 180 by 100 feet, in Cohoes, for manufacturing cotton yarn to be utilized by their knitting plant.

*New York, Clayville. The power plant at the Clayville Knitting Co.'s mill has been thoroughly remodeled and equipped with modern improvements. The plant is lighted by electricity generated by a 1,200 light dynamo. Mill has a daily capacity of 300 dozen garments per day, to be increased eventually to 1,000 dozen garments daily.

New York, Cohoes. The Wright's Health Underwear Co., which has been operating the Mohawk River Mill, has purchased the property. They propose building an addition and will remove the plant at Hoboken, N. J., to this place.

New York, Cohoes. The Roff Underwear Company is making extensive repairs to the Atlantic Mills. New machinery is being installed. The cutting department has been removed to the Green Island plant.

New York, Earlville. It is reported that the Lewis Knitting Co., of Sauquoit, has purchased the Arnold Furniture Co's three story building and will start work at once remodeling same for use as a branch mill. It is expected to start operations about April 1st.

*New York, Elmira. Operations are expected to start within a month by the Campbell Knitting Mills Co. in the Call Manufacturing Co.'s plant, recently secured. The additional building is to be utilized for manufacturing yarns.

North Carolina, Albemarle. The Lillian Knitting Mills have added ten new knitting machines and additional dyeing machinery. They propose adding more machines.

*North Carolina, Chapel Hill. The Blanche Hosiery Mills have not made installation of dye plant in their mill as was reported contemplated by them some time ago.

*North Carolina, Greenville. The Commercial Knitting Company has increased the capital stock from $26,000 to $36,000 and is changing plant from gasoline to steam power; engine, boiler, etc., purchased. An addition has been built for bleachery and the necessary equipment ordered.

North Carolina, Kernersville. The Victor Hosiery Mills have installed 10 176-needle machines in the plant for making cuff top ladies' hose and have changed some of the 84-needle goods to 176-needle. This plant has a total of 48 machines, 7 ribbers, 4 loopers and one sewing machine. They have not yet installed the dyeing plant as was contemplated, but are doing their own finishing.

North Carolina, Lexington. The Yadkin Knitting Mills Co., in which 20 additional knitting machines have been added, now has total equipment of 45 knitting machines and 2 sewing machines.

*North Carolina, Selma. The Selma Knitting Mills, manufacturing half hose and ladies' cotton hose, will install 40 additional knitting machines early next year. They will also add dyeing and finishing machinery, in new dye house, 100 by 40 feet, two stories, already built.

Pennsylvania, Annville. The Annville Hosiery Mills will start operations about Nov. 15th, in a branch mill, which they have established at Lebanon.

*Pennsylvania, Lebanon. Operations will be started about November 26th in the branch mill established here by A. R. Kreider & Bro., of Annville. Men's and ladies' hosiery will be made.

Pennsylvania, Kutztown. The Kutztown Knitting Mills, H. K. Deisher, proprietor, will build an addition, 32 by 65 feet, two stories, brick.

*Pennsylvania, Mt. Carmel. The Mt. Carmel Mill of Wm. F. Taubel's plant has been increased and now operates total of 105 latch needle knitting machines. This plant is operated by electricity. John T. Crompton is superintendent.

Pennsylvania, Philadelphia. The Simons & Struve Hosiery Co., who are operating annexes in Kensington, one in the Bromley Mills, Jasper and York Sts., and another in the Arrott Mills, in that vicinity, are removing both these plants to the main factory on Frankford Ave., in the lower part of Frankford, where they will be consolidated.

Pennsylvania, Philadelphia. E. J. Aucott, who has been running a knitting plant at Wissinoming, for the past year, is removing his machinery to 4945-47 Wakefield St., Germantown, and will have in operation when fully started up 35 knitters, 2 welters and 3 loopers. The production of the plant will consist of men's seamless half hose and women's hosiery, which he will sell direct. The plant will be in full operation by December 1st. Buys 2/40 and 20 single cotton yarn.

Pennsylvania, Philadelphia. Messrs. Lessig & Harrison, 1907-9 N. 6th St., state that they are very busy and not one of their machines are idle. The plant has been greatly increased and they are now operating 144 knitters on men's half hose and women's seamless cotton hosiery, selling direct.

Pennsylvania, Philadelphia. The United States Knitting Mills, operating 90 knitters and 50 sewing machines on sweaters, blouses, vests and juvenile sweaters at 13-15-17 S. 3d St., are to be removed to 220 S. 5th St., where they will occupy the large building formerly used by the Crane Co. They expect to be in their new location by Jan. 1st.

Pennsylvania, Philadelphia. The Rockingham Mills, formerly the Lowd Mfg. Co., located at 11th St. and Ridge Ave., are to be removed within a short time to 8th and Dauphin Sts., to a building which they will equip for their own use. The plant is run on women's and children's ribbed underwear with 27 knitters and 20 sewing machines, the production being sold through New York. The main office of the mill is located at 517-19-21 Bourse Building. H. M. Daniel is the manager and George Manderfield the superintendent. They buy 9s to 16s cotton yarn.

Pennsylvania, Philadelphia. The Royal Knitting Co., 1427-33 Catharine St., manufacturers of ladies' blouses, boys' and infants' sweaters on 26 knitters and 28 sewing machines report business as good. It is the intention of the company to place an order within a short time for a number of new Scott & Williams machines. Bernard Robbins is the president and treasurer and M. Levin the superintendent. The production is sold direct.

They are buying cotton, woolen, worsted and merino yarns.

Pennsylvania, Philadelphia. The Carlton Knitting Co., 23d and Hamilton Sts., who have been manufacturing a line of tams and toques, have recently started up machinery on which they are turning out astrachan, stockinet, jersey cloths and bathing suits in addition to their old line and report business as prosperous. They are operating 40 knitters and use cotton, woolen, worsted, mohair and silk yarns. The buyers for this concern are A. W. Hess for supplies and Mr. Pywell for yarns.

Pennsylvania, Philadelphia. The Lee Hosiery Mills, Kensington Ave. and Ontario St., manufacturers of men's and misses' fashioned cotton and cashmere hosiery, report that they have increased their plant in all departments. They are running 42 spring needle knitters and 19 full fashion machines and also state that their goods are now sold direct from the mill only. They buy 18s to 60s cotton, lisle and worsted yarns.

Pennsylvania, Philadelphia. The Ideal Hosiery Mills, operated by Jones & Page at 2821 Jasper St., on ladies' and misses' seamless hosiery, report that the capacity of the mill has recently been doubled. They are very busy and sell their goods through E. O. Spindler, 350 Broadway, New York.

Pennsylvania, Philadelphia. The Wilton Hygienic Underwear Company, for many years located at 11th and Cambria Sts., have removed their plant to 2239 Delhi St., where they are occupying the third floor of the Lord Bldg. The company, which formerly manufactured fleeced underwear, athletic goods and eiderdown novelties, are now turning out athletic and theatrical goods only on 25 cylinders and 8 sewing machines and report an active business. They sell direct.

Pennsylvania, Philadelphia. Fred. Kaser & Co., 3562 Witte St., whose mill has been run on half hose, has doubled the capacity of his plant and added a line of ladies' plain and fancy seamless goods and reports a good business. They have a capacity of 600 dozens per week, which they sell direct, and are using 8s to 60s cotton yarn on cones.

Pennsylvania, Philadelphia. F. E. Munich, manufacturer of women's fine gauge cotton and lisle hosiery, who has been in business for a little over a year at Jasper and York Sts., states that he is so busy that he will double his plant. He is now making arrangements to take over another floor in the building in which he is located and after January 1st will have in operation 150 knitting machines and 16 heads. The new machinery has already been ordered. The plant is run by electricity.

Pennsylvania, Philadelphia. The Unity Woolen & Worsted Co., located in the Lomax Mill at Jasper and Orleans Sts., are putting in 20 more broad looms and are running on plain and fancy worsteds only and doing a good business. The production is sold through New York. F. E. Clement is the manager.

Pennsylvania, Philadelphia. The Evans & Stonely Knitting Mills now at 5120 Wakefield St., after January 1st will remove their plant to 240-242 Ashmead St., Germantown, where they will have more room. They manufacture men's, boy's and juvenile sweaters of cotton and wool reporting a very good business.

Pennsylvania, Philadelphia. The German American Hosiery Co., Cambria and Oram Streets, has a capital of $150,000 and the following officers: Robert Meyer, president; Michael Rummel, treasurer and Reinhard Huettig, sugerintendent. The plant is very busy on ladies' and misses' cotton and lisle plain and ribbed full fashioned hosiery. A new story has been added to the mill which will be equipped with 24 new full fashion machines and 12 latch needle knitters making the total equipment of the plant 67 full fashion machines, 50 latch needle knitters and 55 sewing machines. The production is sold through New York. They are very busy.

South Carolina, Spartanburg. The Crescent Manufacturing Co. is to install 25 new knitting machines and other equipment in the plant.

Virginia, Martinsville. It is reported that the Roanoke Knitting Mills, of Roanoke, propose establishing a branch mill at this place.

*Wisconsin, Menasha. The Fox River Valley Knitting Co. has decided not to build an addition to the plant at present. A warehouse has been rented until they have fully decided what to do. Four mitten and five hosiery machines have been added.

Mills Shutting Down.

New Jersey, Bordentown. Harry Brakeley's knitting factory is shut down and will not be started up again. The plant containing 2 knitters, 1 ribber and 1 looper, was run on half hose, and will be sold out.

Pennsylvania, Philadelphia. The Lena Hosiery Mills, recently incorporated for the manufacture of hosiery at Lena and Collom Sts., Germantown, has closed up its mill and sold their machinery to other parties, the report being that the company has gone out of existence. This concern also controlled and operated the knitting plant at Collingdale, about a mile and a half from Darby, Pa., which is also out of existence.

Rhode Island, Woonsocket. The Glenark and Colchis Mills have been closed for an indefinite period.

*South Carolina, Newberry. The Excelsior Knitting Mills, Union, have discontinued the branch mill at this place.

*Tennessee, Chattanooga. The Mission Knitting Mills have discontinued operations.

Personals.

P. T. McLendon, formerly superintendent of the Oxford Knitting Mills, Barnesville, Ga., has accepted a position as superintendent of the Berkeley Knitting Mills, Berkeley, Va.

D. C. Bellis has occupied a position as manager of the Southland Knitting Mills, Macon, Ga. He was formerly employed at the Fort Valley Knitting Company, Fort Valley, Ga.

New Machinery and Processes.

This department is designed to present from month to month a brief mention of new machinery, devices and processes being brought out in this country and abroad, that are of interest to textile manufacturers. It is not a list of patents, but of improvements coming on the market. The idea being to present to our readers a systematic monthly record of new machinery etc., of interest to textile mill men.
We invite machine builders and others to send us such information for this department.

New Drawing Roll Covering Material. The Nichols Composition Company, 104 Hartwell Street, Fall River, Mass., are putting on the market a new material for covering drawing rolls used in cotton spinning. Mr. Benjamin F. Nichols has, after years of experimenting, produced a material which is claimed to be admirably adapted for this purpose. It is confidently believed that this material largely eliminates the generation of frictional electricity. Its drawing qualities are claimed to be fully equal to those of the best leather rolls. It is not affected by oil or water. Its cushion effect is all that can be desired. Its life is in excess of leather rolls. It is not affected by passage of hard twist, and the expense is claimed to be less than leather covers when initial cost and wearing qualities are taken into consideration.

These strong claims will undoubtedly be considered by the cotton spinner as extravagant, but the manufacturers base them upon the results of thorough and severe tests in one of the largest cotton mills in this country. We are informed that a spinning frame equipped with rolls covered with this material on August 5, 1905, is still in operation with the roll covers, and apparently in as good condition as when first installed. The application of the material to the roll is accomplished by the use of practically the same machines as are used in leather covering, but the joining is made so that the roll can be revolved in either direction. The Nichols Composition Company do not intend to go into the roller covering business, although they are prepared to cover rolls for demonstration to interested parties. When its merits have been proved to the satisfaction of users they will then furnish the material to mills or roller coverers desiring to use it, and give all necessary instructions for its successful application.

The "Silver" Twister Traveler. The De Haven Manufacturing Co., Columbia Heights, Brooklyn, N. Y., for a long time experimented to find the proper material for twister travelers which would not stain, discolor, or in any way injure cotton yarn, and at the same time run as well and wear as well as any other. The silver alloy twister which they are now offering to the trade is claimed to have all the good points of any other, and the special feature of avoiding any discoloration of yarn, which is a frequent cause of trouble and claims on twisted yarn.

Cloth Folder. Isaac Simonet, Bradford, England. An improved cloth folding and winding machine. An output of 40 yards a minute is claimed.

Thread Board for Ring Frames. Cook & Co., Manchester, England, are introducing an improved metal thread board to which is connected a snarl catcher.

Plush Loom. Heinrich Schoenbrenner, Dueren, Germany. An attachment for weaving pile fabrics by which the pile warp is delivered by a positive motion so as to keep the pile uniform throughout the piece.

Strainer for Waste Water. Wilhelm Lau, Arnswalde, Germany. A screen for reclaiming the textile materials that may pass with the waste liquor from the wool scouring and similar machines. As is well known, more or less material is thus wasted and it is claimed that the Lau machine is very simple and efficient.

Cop Dyeing Machine. Gebr. Wansleben, Krefeld, Germany. An improved machine for dyeing yarn on cops. It is said to give very uniform shades.

MAKING WOOL NON-SHRINKABLE.

A process of manufacturing woolen fabrics for mechanical purposes, by which the cloth is made non-shrinkable in one direction only, is the subject of a recent patent issued in this country. It is described by the inventor as follows:

Fulled woolen fabrics used for mechanical purposes have certain disadvantages when subjected to pressure-tension or moisture. When used as a sleeve or covering for a roller or other machine part they become felted and hard, and then adhesion of the covering is unsatisfactory. Hitherto for the purpose of obtaining proper adhesion the covering is made of a smaller diameter than that of the roller, and by expanding it by hand and taking advantage of the elasticity of the fabric the covering may be applied to a roller of considerably larger diameter. The adhesion on the roller is stronger according as the diameter of the covering is smaller, but the pressure exercised by a fulled fabric depends on the degree of fulling and frequently permits the covering to slide or revolve on the roller, so that its texture becomes distorted.

When a fulled fabric is used as a feed-band or conveyer, which must bear certain strains or traction, the fabric is liable to stretch and ends by breaking after having worked badly; again, when used as the blanket in paper-making machines, it becomes increased in length, reduced in width, and loses its filtering properties.

It is known that elements of the halogen group—viz., chlorin, bromin, and iodin—render wool unshrinkable; but it is impossible to treat the fabrics with these substances after their manufacture for the following reasons: first, because the fabrics being usually of great thickness the substances mentioned do not penetrate through them. Instead they act inefficiently on their surfaces; secondly, because when operating on the completely fulled fabrics the maximum and normal resistance can not be obtained, which is necessary for pressing the coverings on the rollers or giving the fabric the necessary tensile strength when used as a band or apron.

The improved process consists in rendering unshrinkable the animal yarns or fibres used, for instance, as weft-yarns in the manufacture of such fabric by treating them with chlorin, bromin, or iodin, the warp being formed by similar but untreated yarns, or vice versa, and after weaving the fulling is carried out, as usual. By this means a fabric is obtained which is fulled in one direction only, but which is compact, of considerable thickness and solidity, supple, and very suitable for use in connection with machinery.

The advantages obtained by this improved method of manufacture are as follows: The fabric has the necessary qualities for rotary work, and especially with moist substances or in moist surroundings, since it is solid and at the same time supple, and its elasticity will remain because the fabric is unshrinkable and unstretchable in the direction of its rotation. The fabric offers great resistance to tension and pressure, since the strains are taken up by the elasticity of the treated yarns, the latter being present in an unfulled condition in the full fabric.

When used for packing or filtering purposes, the fabric is rendered hygroscopic by the method employed, and its dimensions can be calculated in a mathematical manner, since the yarns do not become thick or felted; in copying any given piece of the fabric it is sufficient to use the same number of yarns in order to reproduce the original dimensions, which is a great advantage, considering that otherwise said reproduction depends on the degree of fulling. Owing to its qualities of tension and contraction, which can be exercised in a normal and maximum manner due to the elasticity of the yarn itself and also owing to its mathematical reproduction, this non-stretchable fabric can also be employed in a dry state or in dry surroundings.

If it should be necessary in certain cases when the fabric is finished and fulled, the warp can be superficially treated with chlorin, bromin, or iodin on the surface of the fabric where the yarn is exposed.

The improved fabric may be used as a muff or sleeve covering for the rollers in the dressing of fabrics or sizing of paper, also in the manufacture of paper as a covering for the

pressure-rollers and as a conveyer or blanket, in the dressing or ironing of linen as a sleeve for covering the rollers of the machine, in rotary printing-machines, especially those for printing in colors, as sleeves or cylinder-covers, blankets, and the like, and generally in all industries and every application where one or more qualities of the improved fabric is or are necessary.

Europe and the Cotton Belt.

The investigation by English spinners of the cotton-growing possibilities in the American cotton belt has aroused great interest in textile circles on the Continent, and in Switzerland a disposition has been shown to follow the English example and share with Lancashire whatever advantage there may be in closer connection with the business of raising the raw material in the United States. If the Swiss or other Continental spinners should carry out this plan they will receive in America as warm a welcome as their English competitors, who, we hope, will not abandon their present attempt to teach the South how to raise more and better cotton. We feel warranted, however, in denying in the most positive terms the report that a delegation of Southern cotton planters are to sail for Europe in the near future to investigate the possibilities of manufacturing fine cotton goods in Lancashire and Switzerland.

In the year 1905 over 250 million pounds of raw and thrown silks were conditioned in the silk conditioning houses of Europe.

The total value of the raw cotton exported from the United States for the fiscal year ending June 30, 1906, amounted to more than 400 million dollars.

In the year ending June 30, 1906, the United Kingdom bought from the United States raw cotton to the value of 177 millions of dollars, Germany, 101 millions, France, 45 millions, Italy, about 27 millions, and the other countries of Europe took about 32 million dollars' worth.

EMPLOYER'S LIABILITY INSURANCE.

The need for protection on the part of employers of labor against claims or suits for damages by employes who are injured in their service is now universally recognized. There are several ways of meeting this need. It has been the custom of some employers to rely on their good treatment of the injured men to free themselves from the annoyance of claims and suits. They pay the wages, hospital and doctors' bills during disability, and then hope that the men will feel well treated and will return to work without giving trouble.

Another means used by some employers is that of setting aside each year, a sum of money toward a "reserve fund" upon which they draw as needed for the settlement of claims. This is, with them, a fixed expense. They count on it each year as one of their liabilities. It should be noted, however, that any such reserve fund, to be at all adequate, must be sufficiently large to provide for the payment of an occasional judgment for a large amount.

The objection to this course is that it requires a considerable amount of money to be held in idleness, thus tying up capital which could be, and most likely ought to be, used in extending and developing the business, purchasing new and more up-to-date equipment, etc.

A third course is carrying an employer's liability insurance.

The employer who has one of these policies, provided the company issuing it is sound and the policy liberal, is protected against loss by the terms of the contract. The only expense is the premium rate, which is less than his so-called "reserve fund" would have to be, as it is based on what is known in insurance circles as the "law of average;" i.e., those plants having no losses, help to reduce the net cost to each policy holder. The protection secured is absolute; the possibility of a large loss, which might impair his credit and even seriously cripple his resources is averted. He is thus left to devote his entire time to the study of his business.

There are many insurance companies that

sell this class of protection. One that has a most enviable record, both for service to policy-holders and liberality of policy forms, is the Maaryland Casualty Company of Baltimore.

That company has just issued a new form of policy, a distinct departure from the standard form as sold by other companies, which frequently cause serious embarrassment to employers by reason of the vexatious conditions it contains.

This new policy is called "The Perfect Form," and is notable for the absence of technicalities, and is offered as a condition-less policy, something that has long been needed.

It may be taken as an indication of the fair-mindedness and liberality of the Maryland Casualty Company that the company has of its own initiative liberalized its policies, without waiting for legislative intervention to compel such action.

During the fiscal year ending June 30, 1906, the United States did a business of $119,304,511 with its outlying possessions.

During the last fiscal year America imported 99,674,107 pounds of carpet wool valued at $13,917,414, of which China furnished 29,283,046 pounds worth $3,546,596.

DEGUMMING SILK.

A machine for degumming silk fabrics, invented by Peter Schmid, Basel, Switzerland, has recently been patented in the United States. The cloth is passed through soap lather, by which the silk is softened and the sericin covering the silk filiments is dissolved. Fig. 1 is a side elevation; Fig. 2, a plan view; Fig. 3, a section along line, X, Fig. 1.

A represents the tank in which the soap solution is heated by a steam coil. This tank contains in its lower part a perforated pipe supplied with compressed air and through which air under pressure may be injected into the soapy liquid, if desired, for the formation of soap bubbles in the upper part of the tank.

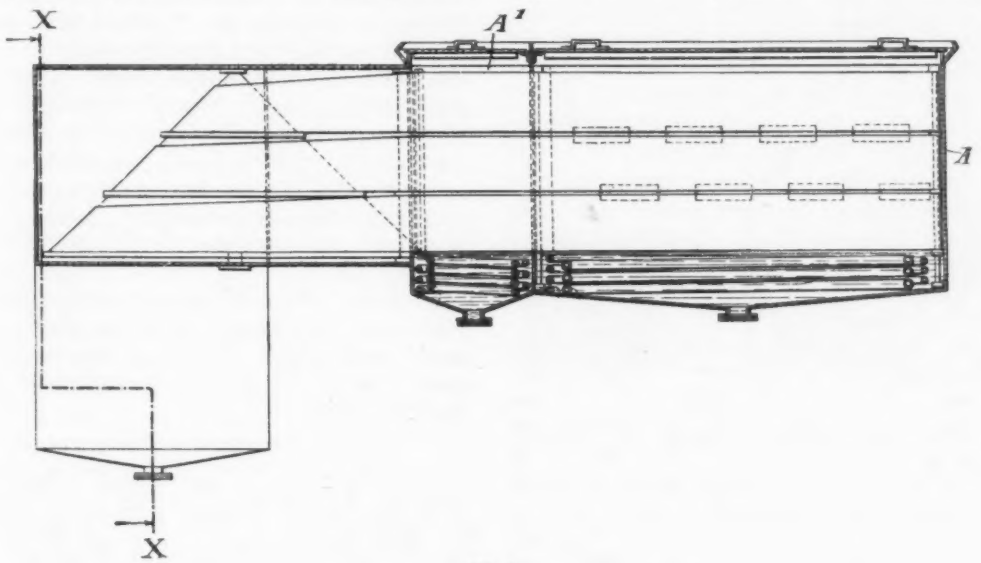


FIG. 1.

Close to the tank is arranged a small chamber connecting the tank to a larger chamber connected with a washing tank. The chamber is also provided with a steam heating pipe and an air injecting pipe.

The tank, as well as the intermediate chamber, contains vertical guide rollers adapted to guide the different tissue or fabrics to be treated. The chamber, B, incloses three truncated cones, placed one above another, over which pass the three webs and the purpose of which is to bring the webs from a vertical to a horizontal position, in

order to enable them to pass from the vertical rollers of the tank, A, upon horizontal rollers of the washing tank, C, which latter simply contains water and is divided by sep-

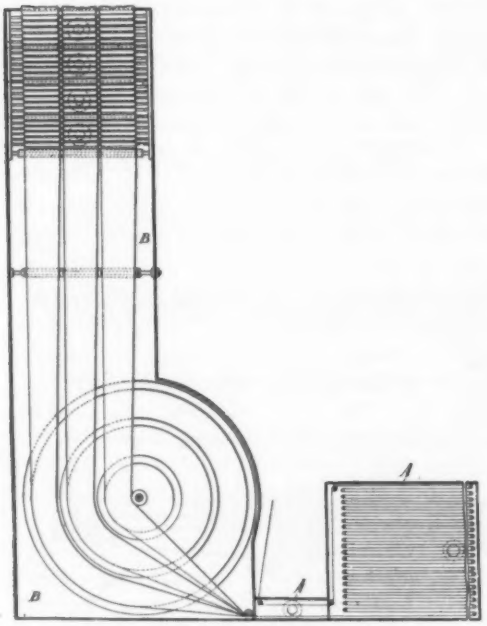


FIG. 2.

arating walls into a plurality of compartments.

The fabrics to be treated are continuously supplied to the chamber through a slot pro-

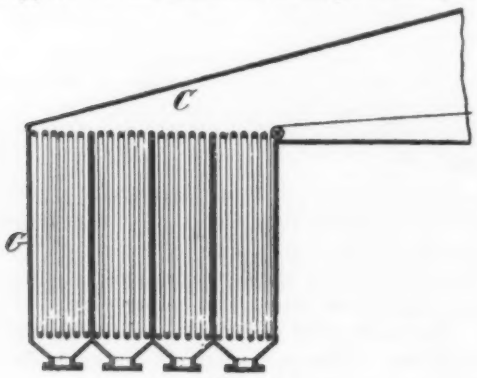


FIG. 3.

vided in the side wall and furnished with two elastic tongues engaging the opposite sides of the fabrics. They pass then through the chamber and by a serpentine way over the vertical rollers of the tank, A, above the soapy liquid contained in the chamber and tank, A, and through the steam and soap lather contained in the upper part of these receptacles, which latter have to be in convenient relation with the outer atmosphere for the purpose of favoring the formation of soap lather with the aid of air penetrating from the outside into the chamber and tank.

In this way the fabrics occupy a vertical position—so as to have all parts in contact with the ascending soap-lather bubbles, and thus be treated in a very thorough manner; whereupon they come out of the tank, A, and enter the chamber, from which they pass through a slot in the chamber, B, and upon the cones and an auxiliary roller. They finally reach the horizontal rollers of the washing tank, C, into which they pass through the washing liquid contained in the compartments. After having been washed they leave the last compartment through a horizontal slot provided in the side wall of the tank, C.

The side walls of the tank, A, are provided with convenient apertures, arranged at different heights and designed to allow the admission of air for favoring the formation of the soap bubbles.

The imports into the Chinese Empire from the United States for the year 1905 amounted to $56,149,291; the exports from China to the United States to $19,732,464.

For the fiscal year ending June 30, 1906, 75,000 bales of raw silk were exported from Japan of which Europe took 20,000 and America 55,000 bales.

The central government of Japan supports two schools, one at Tokio and the other at Kioto, for instruction in sericulture. The course of instruction covers three years.

Of the nearly 48 million dollars' worth of merchandise exported to Cuba from the United States for the year ending June 30, 1906, 10 million dollars were in iron and steel, 11 million dollars in food stuffs, 1 1/2 millions in cotton goods.

Dyeing, Bleaching, Printing, Etc.

DRYING PRINT CLOTH.

BY EUGEN BOERINGER.

(In le Bulletin de la Societe Industrielle de Mulhouse.)

The statements in this article are based on tests covering a period of ten years to determine the relative value of drying plates, drums and cylinders, exhaust steam, hot water, steam power and electric power in the drying of print cloths. The consumption of steam in drying is about the same whether one or twelve cylinders are used for drying, as the power required in the last case is about ten times that required for one cylinder. When the power is generated by steam without a condenser only about one half the heat in the steam is utilized. When the steam pressure required for the engine is the same or somewhat higher than that required for drying the use of exhaust steam affords an advantage.

The consumption of steam in drying varies according to the method employed so that it is necessary in order to draw a fair comparison to make a series of tests in which the conditions are as far as possible the same. The grey goods were first oiled under uniform pressure with two rollers of a six-color machine. One roller was smooth, the other engraved; 109 yards of grey goods, 3/4 wide, 50 by 50, under these conditions absorb 13.9 pounds of water. The water was measured before and after each every test to determine the evaporation. The tests were repeated at intervals of several days and the average of the various results calculated. At the first test the exhaust steam of a small high pressure engine was used. The pieces were dried on 23 plates, which instead of being enclosed in a chamber were covered with cloth to prevent cooling. The plates were first heated with live steam then with exhaust steam. As the supply of steam was very small the plates cooled rapidly and after the cloth had gone but a short distance the drying process proceeded at a very slow rate. With a speed of 10 inches a second a consumption of 85 pounds of steam for driving the machine and for evaporating the 13.9 pounds of water gave an efficiency of 16.3 per cent.

For the second test the conditions were changed. The exhaust steam was carried through a coil of pipes to heat a drying chamber and a small motor was used to drive the ventilator. The speed of the cloth was 13 inches per second; the steam consumption was 88 1/4 pounds per 109 yards. The apparatus was better protected against cooling and the passage of the pieces somewhat longer (115 yards instead of 99 yards). Moreover a good supply of steam was available, resulting in rapid drying. The temperature of the air on drying was 158° to 165° F.; when the exhaust steam of the small ventilating engine was not used the temperature fell to about 140° F. Under these conditions the results were the same as at the first test.

For the third test a condensing engine was used and the plates heated with live steam. The speed of the cloth was 16 inches a second and the consumption of steam 108.1 pounds for evaporating 13.9 pounds of water, giving an efficiency of 12.8 per cent. The temperature of the condensed water was 140° F.

For a further test with the same machine the goods were dried in a chamber heated by live steam. The speed of the cloth was 16 1/2 inches a second, and the air was heated to 217° F. The consumption of steam amounted to 130 pounds for 109 yards, giving an efficiency of 10.7 per cent. This method is consequently less efficient than those used for the previous tests. During the test the power consumed was measured with the following results: A high pressure engine running 100 turns a minute with a cloth speed of 16 inches a second. Power consumed:

Drying machines	1.187 h. p.
Accessories	.983 h. p.
2 rollers	2.36 h. p.
Total	4.53 h. p.

Under the same conditions a low pressure engine showed 5.86 h. p. consumed.

These figures differ somewhat from those obtained when the rollers are under a high pressure. In the latter case 3 h. p. should be substituted for 2.36 h. p.

For other tests electric power was used and the plates heated with live steam under varying pressure. These tests were made in order to determine the amount of steam required for drying exclusive of the power. It should be noted, however, that the drying chamber was poorly protected against cooling. With 23 plates, each with a surface of 32 1/4 square feet, under a steam pressure of 100 to 140 pounds per square inch, 924 pounds of steam were used in one hour. This is equal to 78 pounds for 109 yards of cloth, evaporating 13.9 pounds of moisture, the efficiency amounting to 17.8 per cent.

For further tests with a high pressure engine the cylinders were heated with condensed steam. The consumption of steam amounted to 52.8 pounds and the area of the rollers was 269 sq. feet. Later tests were made with a series of three printing machines with eight, six and three colors respectively. These tests showed that with the use of plates greater economy was obtained than when drying in closed chambers, but still better results were obtained by drying with cylinders heated by hot air.

The conclusion to be drawn from these experiments is that there is no advantage in using electric power or drying chambers as compared with cylinder drying machines. While better results might have been obtained with more improved apparatus yet on reckoning that possibility the extra cost of changing the machinery of the mill must be taken into consideration.

A DYEING MACHINE FOR SHADED EFFECTS.

The machine shown at Figs. 1 to 3 has been built in Germany for dyeing shaded effects on piece goods. It is like others of its class in the use of three superimposed rolls pressed together by a weighting device. The lower of these three rollers, called a color roller, consists of a number of separate disks, which run in corresponding compartments of the dye trough. The middle roll is covered with a material that will absorb the dye liquor and transfer it to the cloth. On the middle roll the liquor is held as delivered by the color roll and transferred by the pressure of the upper roller to the cloth. The different compartments of the dye trough contain liquor of varying degrees of strength, arranged so as to give the desired distribution of liquor on the middle roll.

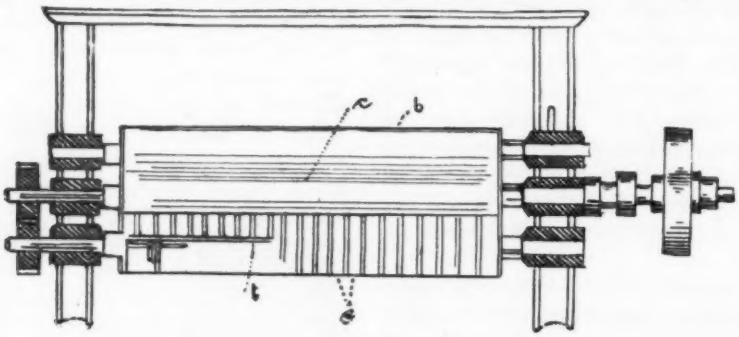


FIG. 1.

The dye trough, t, is divided by thin but tight partitions. At intervals of, say, two inches, the disks of the bottom roller, e, run in the compartments of the trough, t. These rolls are covered with felt or heavy cloth, sometimes with metal or rubber, in which case the surface is corrugated that it may take up the liquor.

The middle roll, which is covered with felt, presses against the disks of the color roll and absorbs the liquor that clings to it. Over the middle roll is a press roll, b. The cloth, a, to be colored, is run in the open

width between the middle felt roll, c. and the pressure roll, b, where it is impregnated with the surplus dyestuff or mordant from the roll, c. The amount of dyestuff thus transferred to the cloth is regulated by the pressure of the roller, b.

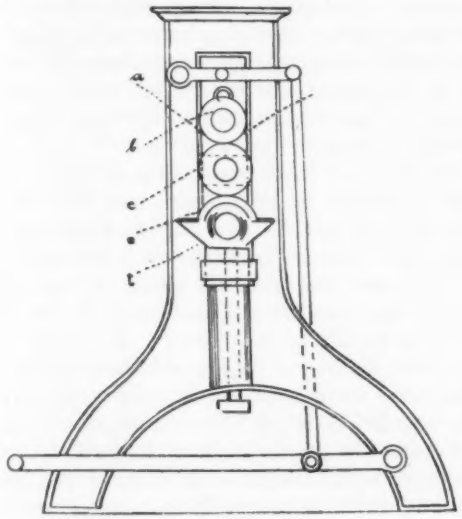


FIG. 2.

It is claimed that with this machine the heaviest goods can be dyed with thorough penetration. The larger the number, that is to say, the narrower the disks running in the color trough, the more delicate is the shading of the colors in the goods. The effect may be varied by filling some of the compartments with water and thus alternate with colored and uncolored stripes. After passing through this machine the cloth is dried and steamed by the usual methods.

The consumption of raw cotton in Mexico is estimated at 100,000 bales annually of which 50,000 are produced in that country, principally in Durango and Coahuila.

A DYEING AND DRYING MACHINE.

A machine for dyeing textile materials by the circulating system and then drying the stock before removal has recently been patented in this country.

Fig. 1 is a vertical section of so much of the apparatus as is necessary to illustrate the present embodiment of the invention. Fig. 2 is a horizontal section showing the relative arrangement of the spider and the base of the basket for holding the material to be dried or dyed.

A is the bottom of a dye tub or vat; B, a conduit adapted to be connected with hot-air or with dye-liquor, and having an upwardly-reaching portion, which is of comparatively large diameter, so as to assure the supply of an adequate volume of hot air or dye liquor to the basket, and is disposed in an opening in the bottom, A, as shown in Fig. 1. In its inner side the conduit, B, is provided with a ledge or shoulder, and at its lower end it is equipped with a stuffing-box.

C is a spindle stepped at its lower end in a suitable bearing and extending upwardly through the stuffing-box and the conduit B and having a spider at an intermediate point.

D is a band-pulley keyed or otherwise fixed on the spindle, C, and located below the stuffing-box.

E is the basket for holding the material to be dried or dyed; F, a nut for holding the said basket down in proper working position; G, a cover for the basket. The basket, E, is made up of an annular base, disposed slightly above the tub-bottom, A, and having a depending annular flange, in the lower end of which are recesses, positioned to receive the arms of the spider, Fig. 2, a perforated tube, and a side wall of wire netting.

The nut, F, is threaded to receive the up-

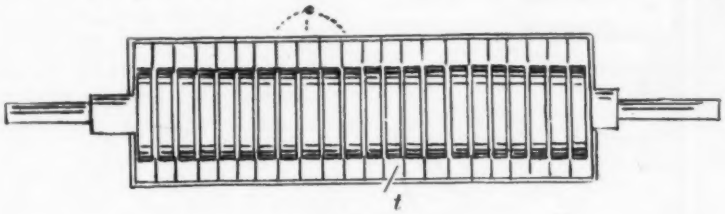


FIG. 3.

per threaded end of the spindle, C, and is arranged to bear on the shoulder of the spindle and rest immediately above the upper end of the tube of the basket, so as to hold the basket against raising, and this without undue friction.

The cover, G, is made up of a central upright tubular portion, which is of a size in cross-section to receive snugly the tube and is closed at its upper end, and a flange, which surrounds the lower end of the tubular portion and is of a diameter to occupy snugly the basket, E, as shown at the top of Fig. 1. The cover, G, may be adjusted vertically in the basket, E, so as to adapt the cover to the quantity of material in the basket. It is also apparent that as the cover is moved downward to carry the flange against the material in the basket the tubular portion sliding over the tube, p, will serve as a stop to the hot air or dye liquor, as the case may be, and compel the same to pass through the material instead of up and out of the tube at a point above the material, as it would do were no cover provided. This assured passage of the hot air or dye liquor through the material instead of above the same materially accelerates the drying when the apparatus is used as an extractor and facilitates the thorough dyeing of the material when the apparatus is used as a dyeing apparatus.

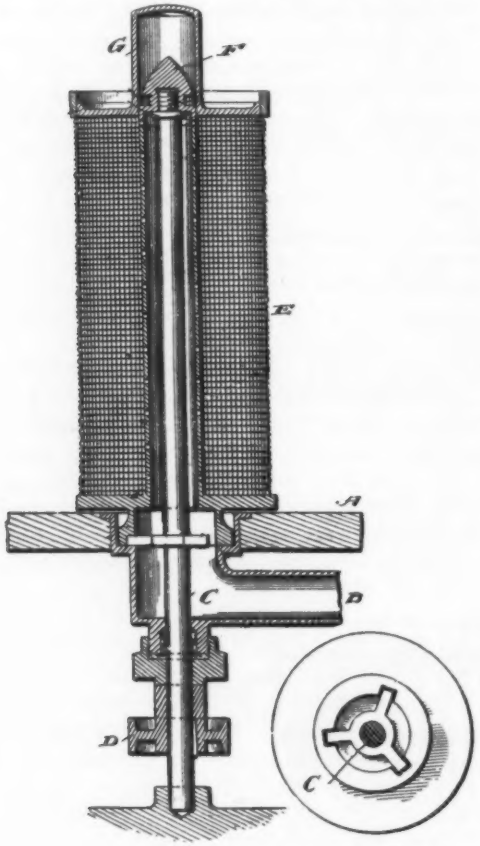


FIG. 1. FIG. 2.

By virtue of the basket being arranged and held between the nut, F, and the spider on spindle C, it will be observed that when the spindle is rotated the basket will also be rotated; when the basket is rotated at a high rate of speed and an adequate quantity of hot air is supplied to the conduit, B, drying of the material in the basket will be expedited. When the apparatus is to be used for dyeing, the spindle, C, is left idle and the dye liquor is supplied to the material in the basket from the interior of the tub or vat or from the conduit, B, which of course in that case must be connected with a pump or other means for supplying dye liquor.

BLEACHING AND FINISHING CANTON FLANNEL.

BY CHARLES AITKEN.

Canton flannel is a difficult grade of goods to handle during the processes of bleaching and finishing. The construction of the goods and the softness of the filling cause it to crack easily on the selvage, and again the foundation nap makes the goods drag heavier in the pot eyes, so that great care is needed to turn out a run of canton flannel in perfect condition. The light goods are not so bad as the heavy ones and the single napped are easier to handle than the double napped.

Canton flannel will not stand so severe a bleaching process as plain goods, and like all other goods the same batch should be kept as near uniform as possible in regard to weight and construction of the goods. It will be difficult to bleach a 2-yard cloth in the same batch as a 5-yard cloth and get satis-

factory results. Resin must be used sparingly, if at all, as it has a tendency to lay the nap so that it can never be brought to the same state again.

First of all the goods should be saturated with water or passed through a large washer, given a chlorine bath of 1° to 2° Tw., passed into a pit and left to age for twelve hours at least. They are then washed, steeped in a bath of sulphuric acid strong enough to neutralize the action of the chlorine for four to six hours, when they are ready to be washed in the kier, care being taken that they are perfectly free from acid. It is better to wash them at low pressure as they must be thoroughly boiled and the low pressure kier is not so severe on the goods as the high pressure.

After the goods are in the kier, a solution is run in made up of 130 pounds soda ash and 150 pounds bleaching paste, boiled until thoroughly dissolved. This quantity will be sufficient for a batch of 7,500 to 8,000 pounds of goods. After adding this solution the kier is filled with water to the desired height and the liquor boiled steadily for twelve hours if a low pressure kier is used, and for nine to ten hours at 12 pounds' pressure if a high pressure kier is used, according to the quality of the goods. After the goods are sufficiently boiled, the liquor is drawn off and the kier flooded with water; then drained and the goods washed thoroughly. The goods are next immersed in a chemic bath, varying from 1° to 2 1/2° Tw., according to the quality of the goods, for twelve to fourteen hours until they are clear. After a little experience the proper time when the goods are ready for drawing can easily be determined. After coming from the chemic they are again washed thoroughly, given another acid bath for four to six hours, again washed thoroughly so there may be no trace of acid remaining, when they are ready for the finisher.

Before beginning the finishing process the goods should be mangled to keep the selvages straight and prevent various shades from appearing in them after they are made up. Then run into the mangle box a solution made of 120 gallons of water, 9 to 15 gallons of soluble oil and enough blue to give the desired shade, diluted with water in the proportion of one-third water and two-thirds composition, according to the softness and quality of the finish desired. After running through the mangle the goods should lie for one to two hours, or until the cotton has absorbed the soluble oil, and then after the goods are dried and napped they will have the soft, silky, flannelly feel so much desired in canton flannels.

The process here described, if carefully performed with a good bleaching paste and soluble oil, will give good results.

A good deal of canton flannel is used in the shoe trade, but these are usually grey and starched very stiff. The finish on these goods is obtained as follows: After a good napping the goods are taken to the back starching machine, and run, with the nap side to the roll, through a mixture made as follows:

120 lbs. sago starch,
30 lbs. potato starch,
50 lbs. dextrine,
15 gallons China clay, 3 lbs. to 1 gallon.
9 gallons steeped flour, 2 lbs. to 1 gallon.
15 lbs. Epsom salts.
Add water to make 120 gallons and boil.

Sometimes the grey goods are very greasy and it is necessary to pass them through the mixture more than once to get them of the required stiffness. After drying they are folded on the machines for shipment.

Brazil has two silk mills, both at Petropolis, near Rio Janeiro.

In 1904 there were in China 19 cotton spinning and weaving mills with 564,648 spindles and 2,250 looms.

The chief imports of China, according to their value, are cotton goods, opium, and oil; the chief exports, silk, tea, and raw cotton.

According to the census reports Philadelphia leads the entire country in the value of its foundry and machine shop products, this being in 1905, $49,529,185. The next largest industry, woolen and worsted, had a production valued at $39,258,414.

Color Cards.

Amine Black; Berlin Aniline Works, New York City.

Four samples of woolen piece goods, one with white striping threads, dyed with different percentages of the new wool dyes, Amine Black 4 B, S 4 B, 6 B, and 10 B.

Naphtylamine Blue Black; Cassella Color Co., New York City.

A card showing various shades of Naphtylamine Blue Black B and 5 B, on woolen yarn and piece goods, for which full working instructions are given. This color is known commercially as Alizarine Black.

Chloramine Yellow; Continental Color & Chemical Co., New York City.

A folder containing two samples of cotton yarn and two of cotton piece goods showing 1 1/2 and 3 per cent. dyeings of Chloramine Yellow FF and W Extra.

Diamond Bordeaux R; Continental Color and Chemical Co., New York City.

A card showing the new red wool dyestuff, Diamond Bordeaux R, on raw wool and woolen yarn. Full working directions are given.

DYE RECIPES.

The following recipes appear in the Dyers' Supplement, which is issued each month by the TEXTILE WORLD RECORD. The Supplement contains the colored samples, dyed according to recipes given. The selection of samples is carefully made, and it is the aim to show shades which are of especial interest to the dyer, and which the requirements of the market demand. The Dyers' Supplement is a 16-page pamphlet, in convenient form for preservation. Subscription price for the Dyers' Supplement $1.00 per year.

Recipe No. 177.

Yellow on Worsted Yarn.

Meta Chrome Yellow R on 100 lbs. worsted yarn. Prepare the dye bath with

6 lbs. Meta Chrome Yellow R,
(Berlin Aniline Works, 213 Water St., New York.)
6 lbs. Meta Chrome Mordant,

dissolving the mordant first and adding the dyestuff afterward.

Enter yarn at 140° F., raise to a boil and dye at a boil for one to one and one-half hours, or until the bath appears exhausted, and then continue the boiling for one-half hour longer in order to completely fix the dyestuff.

Meta Chrome Yellow R possesses the good qualities characteristic of most of the mordant acid colors.

Recipe No. 178.

Sulphur Blue on Cotton Yarn.

Pyrol Blue R R Conc. on 100 lbs. cotton yarn. Prepare the dye bath with

First Bath.

7 lbs. Pyrol Blue R R Conc.
(C. Bischoff & Co., 451 Washington St., New York.)
14 lbs. Sodium Sulphide Crystals.
8 lbs. Soda Ash.
50 lbs. Common Salt.

Second Bath.

4¾ lbs. Pyrol Blue R R Conc.
(C. Bischoff & Co., 451 Washington St., New York.)
10 lbs. Sodium Sulphide Crystals.
2 lbs. Soda Ash.
6 lbs. Common Salt.

Dye for one hour at a temperature just below the boil, keeping the material below the surface of the liquor as much as possible.

Pyrol Blue R R Conc. possesses the characteristic fastness of the sulphur colors.

Recipe No. 179.

Black on Cotton Yarn.

Immedial Brilliant Black 6 B G Conc. on 100 lbs. cotton yarn. Prepare the dye bath with

First Bath.

12 lbs. Immedial Brilliant Black 6 B G Conc.
(Cassella Color Co., 182 Front St., New York.)
15 lbs. Sodium Sulphide Crystals.
10 lbs. Soda Ash.
70 lbs. Glauber's Salt.

Second Bath.

7 lbs. Immedial Brilliant Black 6 B G Conc.
(Cassella Color Co., 182 Front St., New York.)
9 lbs. Sodium Sulphide Crystals.
2 lbs. Soda Ash.
6 lbs. Glauber's Salt.

Dissolve the dyestuff separately with the sodium sulphide, and add the soda ash, and finally the common salt.

Dye at a temperature just below the boil for one hour, keeping the material below the surface of the liquor as much as possible.

Immedial Brilliant Black 6 B G Conc. possesses excellent fastness to light and very good fastness to washing, acids, mercerizing, hot pressing, and stoving.

Recipe No. 180.

Golden Yellow on Worsted Yarn.

Flavazine R L on 100 lbs. worsted yarn. Prepare the dye bath with

3 lbs. Flavazine R L.
(H. A. Metz & Co., 122 Hudson St., New York.)

4 lbs. Sulphuric Acid.
15 lbs. Glauber's Salt.

Enter at 160° F. and dye at a boil for one hour.

Flavazine R L is a very level dyeing acid color and will be found excellent for combination with other acid dyestuffs. It is characterized by its excellent fastness to light and is recommended in preference to most other acid yellows for this particular requirement.

Recipe No. 181.

Gray on Cotton Yarn.

Tetrazo Fast Gray B on 100 lbs. cotton yarn. Prepare the dye bath with

1 lb. Tetrazo Fast Gray B.
(American Dyewood Co., 154 William St., New York.)
30 lbs. Common Salt.
½ lb. Soda Ash.

Enter at 180° F. and dye at a boil for one hour.

Tetrazo Fast Gray B possesses excellent fastness to light for a direct cotton color.

Recipe No. 182.

Deep Pink on Worsted Yarn.

Biebrich Acid Red 5 B on 100 lbs. worsted yarn. Prepare the dye bath with

1 lb. Biebrich Acid Red 5 B.
(Kalle & Co., 530 Canal St., New York.)
5 lbs. Sulphuric Acid.
10 lbs. Glauber's Salt.

Enter yarn at 160° F. and dye at a boil for one hour.

Biebrich Acid Red 5 B is characterized by its level dyeing properties and its fastness to light.

Recipe No. 183.

Sky Blue on Bleached Cotton Yarn.

Brilliant Sky Blue 5 G on 100 lbs. bleached cotton yarn. Prepare the dye bath with

1½ lbs. Brilliant Sky Blue 5 G.
(Continental Color & Chemical Co., 128 Duane St., New York.)
20 lbs. Glauber's Salt.
2 lbs. Acetic Acid.

Enter yarn at a boil and dye at a boil for one-half hour and allow the yarn to remain in the cooling bath one-half hour longer.

Brilliant Sky Blue 5 G is characterized by its brilliancy, the colors produced being equal in brilliancy to the basic blues.

When this dyestuff is used in conjunction with other benzidine colors, the acetic acid should be omitted.

Its fastness is about the same as the ordinary direct cotton colors.

Recipe No. 184.

Green on Worsted Yarn.

Cashmere Green B on 100 lbs. worsted yarn. Prepare the dye bath with

3 lbs. Cashmere Green B.
(Continental Color & Chemical Co., 128 Duane St., New York.)
10 lbs. Glauber's Salt.
4 lbs. Sulphuric Acid.

Enter at 180° F. and dye at a boil for one hour.

Cashmere Green B gives a bluish shade of green which possesses sufficient fastness for ordinary purposes.

Recipe No. 185.

Yellow on Worsted Yarn.

Meta Chrome Yellow R R Extra on 100 lbs. worsted yarn. Prepare the dye bath with

3 lbs. Meta Chrome Yellow R R Extra,
(Berlin Aniline Works, 213 Water St., New York.)
3 lbs. Meta Chrome Mordant,

dissolving the mordant first and adding the dyestuff afterwards.

Enter yarn at 140° F., raise to a boil and dye at a boil for one to one and one-half hours, or until the bath appears exhausted, and then continue the boiling for one-half hour longer in order to completely fix the dyestuff.

Meta Chrome Yellow R R Extra possesses the good qualities characteristic of most of the mordant acid colors.

Recipe No. 186.

Red on Cotton Yarn.

Tetrazo Fast Red D on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Tetrazo Fast Red D.
(American Dyewood Co., 154 William St., New York.)
30 lbs. Common Salt.
½ lb. Soda Ash.

Enter at 180° F. and dye at a boil for one hour.

Tetrazo Fast Red D possesses excellent fastness to light for a direct cotton color.

Recipe No. 187.

Black on Cotton Yarn.

Immedial Brilliant Black 5 B V Conc. on 100 lbs. cotton yarn. Prepare the dye bath with

First Bath.

12 lbs. Immedial Brilliant Black 5 B V Conc.
(Cassella Color Co., 182 Front St., New York.)
15 lbs. Sodium Sulphide Crystals.
10 lbs. Soda Ash.

70 lbs. Glauber's Salt.

Second Bath.

7 lbs. Immedial Brilliant Black 5 B V Conc. (Cassella Color Co., 182 Front St., New York.)
9 lbs. Sodium Sulphide Crystals.
2 lbs. Soda Ash.
6 lbs. Glauber's Salt.

Dissolve the dyestuff separately with the sodium sulphide, add the soda ash, and finally the common salt.

Dye at a temperature just below the boil for one hour, keeping the material below the surface of the liquor as much as possible.

Immedial Brilliant Black 5 B V Conc. possesses excellent fastness to light and very good fastness to washing, acids, mercerizing, hot pressing and stoving.

Recipe No. 188.

Yellow on Worsted Yarn.

Alizarine Yellow G on 100 lbs. worsted yarn. First mordant the yarn in a bath made up with

3 lbs. Potassium Bichromate,
2 lbs. Half-refined Tartar,

entering at 140° F. and mordanting at a boil for one and one-half hours. Then enter the yarn into a bath made up with

2 lbs. Alizarine Yellow G. (E. M. Thayer & Co., 411 Atlantic Ave., Boston.)
4 lbs. Saccharic or Lactic Acid.

Enter yarn cold, bring slowly to a boil, and dye at a boil for one hour to one hour and a half.

Alizarine Yellow G is an exceedingly fast color. It works well with all other alizarine colors and, on account of its level dyeing properties, is particularly useful for combining with them.

Recipe No. 189.

Sulphur Blue on Cotton Yarn.

Pyrol Blue R Conc. on 100 lbs. cotton yarn. Prepare the dye bath with

First Bath.

7 lbs. Pyrol Blue R Conc. (C. Bischoff & Co., 451 Washington St., New York.)
14 lbs. Sodium Sulphide Crystals.
8 lbs. Soda Ash.
50 lbs. Common Salt.

Second Bath.

4¾ lbs. Pyrol Blue R Conc. (C. Bischoff & Co., 451 Washington St., New York.)
10 lbs. Sodium Sulphide Crystals.
2 lbs. Soda Ash.
6 lbs. Common Salt.

Dye for one hour at a temperature just below the boil, keeping the material below the surface of the liquor as much as possible.

Pyrol Blue R Conc. possesses the characteristic fastness of the sulphur colors.

Recipe No. 190.

Yellow on Worsted Yarn.

Flavazine 3 G L on 100 lbs. worsted yarn. Prepare the dye bath with

3 lbs. Flavazine 3 G L. (H. A. Metz & Co., 122 Hudson St., New York.)
4 lbs. Sulphuric Acid.
15 lbs. Glauber's Salt.

Enter at 160° F. and dye at a boil for one hour.

Flavazine G L is a very level dyeing acid color and will be found excellent for combination with other acid dyestuffs. It is characterized by its excellent fastness to light and is recommended in preference to most other acid yellows for this particular requirement.

Recipe No. 191.

Deep Red on Worsted Yarn.

Biebrich Acid Red 5 B on 100 lbs. worsted yarn. Prepare the dye bath with

4 lbs. Biebrich Acid Red 5 B. (Kalle & Co., 530 Canal St., New York.)
5 lbs. Sulphuric Acid.
10 lbs. Glauber's Salt.

Enter yarn at 160° F. and dye at a boil for one hour.

Biebrich Acid Red 5 B is characterized by its level dyeing properties and its fastness to light.

Recipe No. 192.

Black on Cotton Yarn.

Paranol Black R on 100 lbs. cotton yarn. Prepare the dye bath with

4 lbs. Paranol Black R. (E. M. Thayer & Co., 411 Atlantic Ave., Boston.)
25 lbs. Common Salt.

Enter at 170° F. and dye at a boil for one hour.

Paranol Black R is a new product, quite concentrated, and very fast to light and acids. It is an excellent black for union dyeing.

United States exports to Cuba for the year ending June 30, 1906, amounted to $47,763,688.

Mill News.

Those interested in receiving early and more complete investigated information of projected new mills, enlargements, improvements, fires facts and gossip of the trade are referred to the Textile Advance News, issued weekly by the publishers of the Textile World Record, at $15.00 per year.

COTTON.

New Mills.

*Connecticut, Plainfield. The Lawton Mills Corporation is to increase the capital stock to $500,000. Work is progressing on the various new structures.

Georgia, Columbia. The Swift Spinning Mills have been incorporated with capital stock of $125,000 and will erect a 10,000 spindle mill. E. W. Swift, J. P. Kyle and Clifford Swift are interested.

*Georgia, Summerville. Work has been started on erection of new buildings for the Summerville Cotton Mills, capitalized at $150,000. Jno. D. Taylor is president and treasurer of the company and Ernest Montgomery, superintendent. Plant will be equipped with 5,000 spindles and 150 looms for making duck. Product will be sold direct.

*Massachusetts, Fall River. The Lincoln Manufacturing Company has been incorporated with capital stock of $600,000 and will soon start work on erection of a large mill for making fine goods. Leontine Lincoln is president of the company; Benj. B. Read, Jr., treasurer. The mill is to be equipped with about 50,000 spindles and 1,000 looms.

Massachusetts, New Bedford. The Quansett Spinning Company has been incorporated with capital stock of $600,000 and will erect a new mill, 131 by 367 feet, three stories; also a two story warehouse, 100 by 60 feet. Wm. C. Hawes is president of the company and Frederic H. Taber, Treasurer. It is proposed to have the mill in operation by June 1st.

*Massachusetts, New Bedford. Work has been started on erection of the new mill buildings for the Nonquitt Spinning Co., capitalized at $1,200,000. This company will make combed warp yarns, operating plant of 60,000 ring spindles. Wm. Whitman is president of the company; Leonard Lapham, treasurer and Andrew J. Currier, agent. Plant will be operated by steam. Harding, Whitman & Co. will be selling agents.

New York, Amsterdam. The Anchor Knitting Mill building has been purchased by the Little Falls Fibre Company, which will install new machinery for manufacturing cotton batting in addition to the mill's present factory.

*North Carolina, Belmont. The Imperial Yarn Mills, Inc., $250,000 capital, expect to have their plant running about Jan. 15th, making cotton yarns, No. 40. This mill is equipped with 10,316 ring spindles and operated by electricity. A. C. Lineberger is president of the company; R. L. Stowe, treasurer and Geo. Howell, superintendent.

*North Carolina, Charlotte. The Mayes Mfg. Co. has not yet completed construction work of their new mill for making fine combed and carded yarns.

*North Carolina, Gastonia. The Clara Manufacturing Company expects to have their plant running by the first of December, with a 5,000 spindle equipment.

*North Carolina, Gastonia. Work has been started on foundations of new buildings for the Holland Manufacturing Co. The company expects to have the plant in operation early next year making warps and skein yarns, with equipment of 2,048 spindles. Electricity will be motive power. Company is capitalized at $125,000; Geo. A. Gray, president and L. L. Jenkins, vice-president.

*North Carolina, Granite Falls. The Dudley Shoals Cotton Mill Co. has started work on erection of a new mill which they propose having in operation about August 1, 1907, making yarns, 40s to 60s, with equipment of 5,000 spindles. The plant will be operated by electricity. Company is capitalized at $100,000. D. A. Whesnant, president, and D. H. Warlick, treasurer and buyer.

*North Carolina, Lincolnton. The Rhodes Mfg. Co., incorporated with capital stock of $80,000, and which has been reported as contemplating starting operations in November, will not be ready before June 1st, 1907. The plant will be run on Osnaburgs, ducks and heavy drills.

*South Carolina, Rock Hill. It is expected to have the Arragon Cotton Mills, under construction, completed in the spring.

*North Carolina, Rockingham. The Hannah Picket Mills expect to start operations in from three to four months, in the new building being erected at this place. They will manufacture hosiery yarns, 20s to 30s, with an equipment of 10,080 ring spindles. This company is capitalized at $200,000; R. L. Steele is president; W. B. Cole, treasurer and buyer.

North Carolina, Rosemary. The Transylvania Company has been incorporated with capital stock of $50,000 and will operate a plant for manufacturing fancy shirtings and towels. E. E. Bowen (Greensboro) is president of the company and L. S. Carman (Roanoke Rapids), secretary.

*North Carolina, Selma. The machinery is being installed in the Lizzie Cotton Mills and it is expected that the plant will be ready to start operations by Jan. 1st. As previously reported the mill will have an equipment of 10,500 spindles.

*Rhode Island, Pawtucket. Eugene N. Foss will be president of the new Burgess Mills, being erected at this place.

*South Carolina, Greenville. Nearly all the machinery has been received for the Vardry Cotton Mills and operations will soon be started. This plant will be operated on fancy colored yarns.

*South Carolina, Iva. Operations will soon be started in the new Jackson Cotton Mill.

*South Carolina, Pickens. The new Pickens Mill will not be ready for operation before May 1st and will make 4-yd. goods, 48 by 52. This company is capitalized at $125,000, and will have an equipment of 15,000 ring spindles and 450 looms. Goods will be sold through Woodward, Baldwin & Co., N. Y.

*South Carolina, Woodruff. We have been advised by W. S. Gray that a company will be organized to build a cotton mill here, about Jan. 1st. J. E. Sirrine of Greenville, S. C., will be engineer in charge.

*Tennessee, Chattanooga. The Wachovia Cotton Mills, incorporated with capital stock of $1,500,000, are to erect a new plant near this place, with equipment of 100,000 spindles and 3,500 looms. Definite arrangements have not yet been completed. W. Young is president and general manager of the company.

*Tennessee, Del Rio. Work is expected to start about February 1st on erection of the new buildings for the Del Rio Cotton Mills being organized. Among those interested in the above plant are John N. Adams (Del Rio), M. H. Wheeler (Neenah, Wis.), and Geo. M. Ryall (150 Nassau St., N. Y.).

Enlargements and Improvements.

Alabama, Huntsville. Contract has been let for erection of a new building, 60 by 80 feet, to the Abingdon Cotton Mills. Several thousand additional spindles will be installed.

*Alabama, Lanett. The Lang Manufacturing Co. has built a picker room and new weave shed, and equipped with new machinery.

*Alabama, Opelika. The Opelika Cotton Mills will add 2,464 new spindles to their present equipment of 12,634.

*Connecticut, Central Village. Work is progressing on the new mill for the Central Worsted Co. A 175 h. p. boiler is to be placed in position and a 125 h. p. engine will soon be installed.

Connecticut, South Coventry. A number of new braiding machines have been installed in T. C. Wood's mill for the fish line department.

Georgia, Augusta. The Augusta Factory has recently placed an order for 55 Bell humidifying machines with the Bell Pure Air & Cooling Co., after a careful investigation of this system in operation at the American Textile Co., of Cartersville, Ga., as well as in other mills, and will equip their plant with it.

*Georgia, Newnan. The Newnan Cotton Mills advise that work is nearing completion on their No. 2 mill, which will have a total equipment of 35,000 spindles. They expect to have half the equipment, 17,500 spindles, in operation by February. The dye plant of this mill is not expected to be ready before the latter part of summer.

*Georgia, Pelham. The Pelham Mfg. Co., reported some time ago to install 6,500 additional spindles and 150 looms, has part of the new equipment in operation. They expect to have the whole additional equipment in operation by January 1st. They have also put in during the year 5 filling twister frames, 640 spindles and 3 warp twister frames, 360 spindles.

Georgia, Thomson. Work has been completed on an addition to the J. E. Smith Manufacturing Company's mill and additional machinery will be installed, increasing equipment to 10,000 spindles and 250 looms.

*Maine, Lewiston. It is expected that the Avon Manufacturing Co. will have the old Lewiston Machine Co.'s building ready to start operations in February. Contract has been awarded for machinery, for spinning yarns.

Massachusetts, Fall River. The Luther Mfg. Co. is to build a two-story addition to the picker house wing of No. 1 mill. Machinery for increasing the preparatory division will be installed.

*Massachusetts, Fitchburg. The Grant Yarn Company reported to build an addition to the plant will install 6,000 new spindles.

*Massachusetts, Lawrence. The Atlantic Cotton Mills have completed remodeling the storehouse. The building now has capacity of 8,000 bales, previous to renovation holding but 3,000 bales.

*Massachusetts, Lowell. The Lowell Weaving Co.'s new mill will be ready for occupancy about Feb. 1.

Massachusetts, Lowell. It is reported that the Boott Mills, now operating about 70 looms on light and heavy weight ducks, expect to have about 120 running on this class of goods by Dec. 1st. They propose increasing to 500 looms.

Massachusetts, New Bedford. The New Bedford Cordage Company is to build a new three story mill, 102 by 86 feet.

Massachusetts, Taunton. New machinery is to be installed in the Nemasket plant of the New England Cotton Yarn Company.

*Mississippi, Laurel. The Laurel Cotton Mills have equipped their new plant with 8,320 spindles and now have capacity of 18,720 spindles.

*North Carolina, Concord. The Gibson Mfg. Co. has completed erection of their new saw tooth roof weave room and have equipped same with 500 looms. Will be put in operation next week, with electrical power.

North Carolina, King's Mountain. The Bonnie Cotton Mills are to install 2,500 twister spindles (ordered) and make 2-ply yarn.

North Carolina, King's Mountain. The Enterprise Mill is reported as contemplating improvements to the plant.

North Carolina, Roanoke Rapids. It is reported that the Roanoke Mills Company contemplates enlarging the plant early in the new year.

*North Carolina, Roxboro. Work is well under way on the erection of the new mill of 10,000 spindles for the Roxboro Cotton Mills. They propose having same in operation early in the spring.

*North Carolina, Spray. The Rhode Island Company, manufacturers of fine yarns and cotton blankets, reported some time ago to enlarge the plant, is adding 30,000 feet of floor space. They will install 4,000 spindles and 200 wide looms about the first of the year.

*Pennsylvania, Nazareth. On November 5th the Nazareth Knitting Mills succeeded to the business of Fred. Wunderly. The new proprietor expects to increase the plant by adding new machinery and also putting in a dyeing plant.

*Pennsylvania, Wilkesbarre. The new addition to the Wilkesbarre Lace Mill will soon be ready for use.

*Rhode Island, Centreville. The Warwick Mills have started work on erection of the large weave shed, which they propose having completed about April 1, 1907. They will install 30,000 new spindles and 550 looms for making fine combed cotton goods, plain and fancy.

*Rhode Island, Centreville. Operations will be started Jan. 1st in the new addition recently built to the Centreville Mill (B. B. & R. Knight). The plant will have a total equipment of 32,176 ring spindles, 7,824 mule spindles and 1,100 looms, making all kinds plain cotton cloth.

*Rhode Island, Pawtucket. Work is nearing completion on the addition to the Hope Webbing Company. The new buildings are to be used for office, packing room and weave shed.

*South Carolina, Anderson. The additional machinery is being installed in the H. C. Townsend Cotton Mill and the capacity will be increased to 5,040 spindles.

*South Carolina, Cowpens. The Mary Louise Mills have completed additions reported to be made last April.

South Carolina, Gaffney. Some additions are being made to the Irene Mills, now making a fine grade of cotton damask.

*South Carolina, Greenville. The F. W. Poe Mfg. Co., reported some time ago as making addition of 750 looms, advises us that they are replacing 752 plain looms with same number of 40 inch Northrop looms.

*South Carolina, Jonesville. The new machinery, 10,000 spindles and 300 looms, added to equipment of the Jonesville Mfg. Co.'s plant, will be completely installed about Jan. 1st.

*South Carolina, Pacolet. The report of addition 110 by 107 feet, to be made by the Pacolet Mfg. Co., is only a change in plan for the construction of their No. 5 mill.

Wisconsin, Milwaukee. A new lace factory is to be erected here by Emil O. Pretzoldt, proprietor of the American Art Embroidery Co.

Mills Starting Up.

*New York, Newburgh. The Newburgh Steam Mills are to resume operations making print cloths. Garner & Co. has been organized with capital stock of $100,000 with William E. Thorn, president; Ascar Hussa, treasurer and Fred Knott, agent and superintendent, to operate the plant. This mill is equipped with 13,248 mule and 12,380 ring spindles, with 472 broad and 110 narrow looms.

WOOLEN.

New Mills.

*California, Marysville. Machinery has been received for installation in the new plant to be started here by the Marysville Wool Scouring Co., recently reported incorporated.

*Connecticut, Putnam. The Pine Tree Worsted Co. is operating a plant of 25 looms making cotton worsteds. This company is capitalized at $25,000; Geo. J. Torrance, president; Robt. E. Torrance, treasurer and Jere Emery, agent and superintendent. Product is sold direct. The company is reported to erect a new mill, 44 by 72 feet, two stories high.

*Connecticut, Rockville. Work is progressing on the new mill for the Winterburn Manufacturing Co. It is expected to have building ready for roof about January 1st.

*Massachusetts, Clinton. Although the Messrs. Pickford have not definitely decided location of their plant, they have secured plans for the new buildings.

*Massachusetts, Spencer. Arthur Monroe is president of the Priscilla Worsted Co. (capital stock $3,000), recently organized to manufacture shoddies (raw stock) at this place. Simon Taylor is treasurer, superintendent and buyer for the concern. Plant is equipped with 2 sets cards and operated by water power.

*New Jersey, Trenton. The Columbia Carpet & Rug Co., capitalized at $125,000, will start production this month, making Smyrna and Axminster carpets and rugs and women's hosiery. The plant will be equipped with 104 looms, 50 hosiery machines and 5 loopers. Product will be sold direct. Anthony Hankey is president of the company and Frank Geyer, treasurer and agent. A dye house is under consideration.

*New York, Jamestown. Enoch Greenwood is president of the Greenwood Worsted Mills, recently reported organized for manufacturing fine dress goods. Geo. E. Feather, vice-president and J. E. Pitts, secretary and treasurer.

*North Carolina, Winston-Salem. As soon as plans have been completed, work will start on erection of the new buildings for the branch mill to be established here by the Chatham Mfg Co. The new building which they propose having in operation about July, will be equipped with 6 sets cards and 50 looms for making woolen blankets. Plant will be equipped with dye house and operated by steam power.

Pennsylvania, Wallingford. The Fearless Textile Company is a new concern recently started at this place, making fine worsted suitings for men's wear. Arthur Elston is general manager and buyer for the mill, equipped with 3 combs, 3 cards, 1,800 worsted spindles and 34 looms, using the Bradford

system. A dye house is also operated. Company has a New York office, 817-918 Broadway.

*Pennsylvania, Wallingford. The Fearless Textile Co. recently reported established at this place, has taken over the weaving department of the Columbia Worsted Co. and have purchased the plant of the Grove Mills, at Chester, for their yarn department.

*Rhode Island, Ashaway. The Progress Worsted Mills, recently reported purchased by William Rodger, will be continued as the Nashua Valley Mills, the company retaining their old name. Wm. Rodger is president, manager and buyer for the concern and Chas. G. Bancroft, treasurer. They will make worsted goods, having an equipment of 24 looms. Goods will be sold through W. Stursberg, Schell & Co., N. Y.

*Rhode Island, Pascoag. Work is nearing completion on the Hawthorne Worsted Co.'s new mill. The main building will be 154 by 44 feet, two stories, with separate boiler and engine house. It is expected to have the mill running by January 1st, with equipment of 30 looms, making cotton worsteds.

*Vermont, Ludlow. The Jewell Brook Woolen Company has completed work on erection of their new mill and the plant is in operation.

*Wisconsin, Waupaca. The Waupaca Felting Mills are incorporated with capital stock of $50,000 for making felt hat bodies. Isaiah Boorse is president of the company; and W. A. Proctor, treasurer and superintendent. A dye house is attached to the plant. Product is sold direct.

Enlargements and Improvements.

*Connecticut, Montville. Work has been started on the repairs to the Monarch Woolen Co.'s plant.

Connecticut, Stafford Springs. The Warren Woolen Company has placed order for 7 new looms to be installed.

Indiana, South Bend. The South Bend Woolen Co. is installing additional machinery in the plant, including several new spinning mules, wet and dry finishing machinery and about 12 looms.

Maine, Lewiston. The old Frye Woolen Mill is to be replaced with a new brick building, an annex to the Columbia Mills. Finishing and weaving machinery will be installed.

Maine, Sanford. An addition, three stories, for spinning purposes, is being built to No. 4 mill of the Sanford Mills plant. Work has been finished on the new dry and storehouse.

*Massachusetts, Charlton City. As soon as the new looms (ordered) have been placed in the Akers & Taylor Co.'s mill, they will discontinue making satinets.

*Massachusetts, Farnumsville. Contract has been let for the erection of a new weave shed for the Excelsior Mills. The building will be 133 by 150 feet, one story.

*Massachusetts, Farnumsville. Work has been started by the Excelsior Mills on erection of new weave shed addition, 106 by 133 1/2 feet.

Massachusetts, Lowell. A new dye house, 100 by 40 feet is to be erected for the Merrimack Woolen Mills. Construction work has begun.

*Massachusetts, Lowell. The new dye house which the Massachusetts Mohair Plush Co. is erecting will be 195 by 70 feet, one story, brick, and will replace the present dye house.

Massachusetts, Lowell. An addition, 100 by 24 feet, has been built to the Belvidere Woolen Co.'s mill for a dry house. A new drying machine has been installed.

Massachusetts, Methuen. The Tremont Worsted Co. is building an addition to the plant.

Massachusetts, Monson. D. W. Ellis & Sons have installed two new spinning mules in No. 1 mill.

Massachusetts, New Bedford. An addition, 100 by 88 feet, brick, upon which work has been started, is to be built to the Beacon Manufacturing Co.'s mill.

For Knitting Mill News, see Knitting Department.

SILK.

New Mills.

*New Jersey, Paterson. The new plant started in the Barnert Mill, by William Rogers, is for commission throwing and has an equipment of 3,200 spinning spindles with auxiliary machinery.

*Pennsylvania, Allentown. C. M. Iaron is president of the Astron Silk Company, operating a plant on piece dyed and surface printed silk goods. C. H. Moyer is treasurer of the concern.

*Pennsylvania, Berwick. The Baer Silk Mill at this place, branch of Lehighton Mill, has an equipment of 10,000 spindles. The plant has accommodations for more than 20,000 spindles.

*Pennsylvania, Emaus. Work has been started on erection of the new mill to be operated as a branch mill of D. G. Dery's plant at Gatasaqua. Operations are expected to start about February, making dress silks.

*Pennsylvania, Lehighton. The Carbon Silk Mill will start operations about Dec. 10th in their new plant, throwing silk. This mill is to be equipped with 8,000 spindles.

Pennsylvania, Reading. Work is to start shortly on erection of a two-story building for a new silk concern. It is expected that the plant will be running about February.

Enlargements and Improvements.

California, Los Angeles. The Los Angeles Silk Works, D. I. Newton, proprietor, contemplates erection of a new building. This plant is equipped with 6 looms making medium and high grade silks.

Connecticut, Norwich. A new weave shed, 140 by 111 feet, is to be built for the J. B. Martin Company. They will instal 100 looms to be operated by electric motors.

*Connecticut, Stonington. The new addition, 150 by 60 feet, to the American Velvet Co.'s plant, has been completed and is used as a warehouse.

New Jersey, Burlington. The Burlington Silk Weaving Co. is to purchase the mill building occupied and will build an addition to same.

New Jersey, Paterson. A. & M. Levy, silk manufacturers are to erect a new plant at this place. The main building will be 400 by 60 feet, four stories, and power house, one story. A reservoir with capacity of 75,000 gallons will be constructed in the rear. They will instal 200 large Crompton-Knowles looms.

New York, Amsterdam. The contract for furnishing both light and power to the Amsterdam Silk Mills, on Elk Street, has been let to the Edison Elec. Light & Power Co. A new system is being installed in the mill.

New York, Ogdensburg. Contract has been awarded for erection of an addition, 110 by 109 feet, to the Ogdensburg Silk Mill. It is expected to have the building completed by Feb. 1st. The company is now seeking quarters to start school for instruction purposes.

Pennsylvania, Allentown. The Klatz & Bregenzer silk mill is to be enlarged and a number of additional looms installed.

*Pennsylvania, Alburtis. Work has been started on erection of the addition to the Alburtis Silk Mill.

Pennsylvania, Easton. Foundations have been laid for a new mill for R. & H. Simon. The new building will be 300 feet long.

MISCELLANEOUS.

Massachusetts, Boston. The New Process Dyeing Company has been incorporated with capital stock of $21,000. Murrah M. Kent is president of the company; William E. Gale, treasurer. Specialty will be made of dyeing carpets and upholstery goods. Factory is at 537 Albany St.

Massachusetts, Methuen. Plans are being prepared for an addition, 40 by 75 feet, two stories, to be built to the Tekcips Dyeing & Finishing Co.'s plant. They will also add new winding and spooling machinery.

New Hampshire, Milford. The Morse-Kaley Mills, dismantled by the American Thread Co., have been leased to the Middlesex Linen Company, which will equip plant for manufacturing towelings and similar goods. J. W. Pead of Lowell is interested in the new company.

New Jersey, Boonton. The Liberty Manufacturing Co. has been incorporated with capital stock of $8,000 to manufacture printed cloths. Thomas J. Hillery is agent in charge. Others interested are Adam Casterall and William Powers.

New Jersey, Fairview. The Bellman Brook Bleachery Co. is operating its plant to the full capacity. An addition is under way to the finishing department and new machinery will be installed which will double present output.

*New York, Fort Edward. The Standard Textile Company (P. O. address Glen Falls), has started operations in their new mill making cotton batting and shoddy. This plant is capitalized at $25,000, with Winfred A. Huppuch, president; Walter W. Clark, treasurer and Thos. Cocker, superintendent. Cotton batting and shoddy are made. Product is sold partly direct.

*North Carolina, Lattimore. The Pink Manufacturing Company, which has been established here recently, is making arrangements for adding additional machinery, which will give a capacity of 6,000 lbs. per day.

Pennsylvania, Bristol. The American Turkey Red Dye Works has recently been started up in the Hughes Mill, where they are dyeing colors on cotton yarns. One of the members of the company is Arnold Keller, who has the plant in charge.

Pennsylvania, Philadelphia. Max Sarfert has equipped a department of his large Germania Dye Works at Kensington Ave. and Allegheny Ave. with machinery for the dyeing of yarn on the cops, cones and tubes, which are working with great satisfaction. Mr. Sarfert also states that it is his intention to put in coning machinery, an order for which he will place within a short time.

Pennsylvania, Philadelphia. Messrs. Smith & Quicksall, Willow and Dyre Streets, Frankford, whose establishment was burned out several months ago, have had the building rebuilt and have re-equipped it with the latest improved machinery for the finishing of hair cloth, and dry finishing of cotton goods and other textiles and report that they are doing a good business. The plant is known as the Merit Finishing Works.

Pennsylvania, Philadelphia. The Peerless Bleach Works, who have been operating the old bleachery on Factory St., above Adams Ave., Frankford, have had erected a new plant on Elizabeth St. below Unity. The new building is a combination two and one story structure of brick 100 by 40 feet and is being fitted up with the latest improved modern machinery for the bleaching of hosiery, knit goods and piece goods in general. It is also the intention of Messrs. Flynn & Kelly, the proprietors, to add another building for the dyeing of sulphur colors on hosiery for which there is now a great demand. The bleachery will be in operation, they state, within two weeks, at which time they hope to be able to handle to better advantage the large business they have built up within the past few years. The plant is also equipped with one of the latest improved 36-inch filters supplied by the Hungerford Filter Co., Philadelphia. The Hungerford Filter Corp. have also just completed installation of a large filtering plant at the Newburg Bleachery, Newburg, N. Y., which now has a water purifying plant supplying 5,000,000 gallons of water per day.

FACTS AND GOSSIP.

*Arkansas, Little Rock. Although nothing definite has been done concerning the establishment of a cotton plant here, M. C. Roe, of Monticello

has been consulting with the Board of Trade regarding it.

*California, San Diego. We have been advised by Herman Fascher, reported interested in erection of a silk plant, that they are awaiting patents and when these have been issued will form a company and erect plant.

Connecticut, Meriden. Plans have been prepared for an addition, brick, 52 by 30 feet, one story, to be erected for the New England Braid Co. Additional machinery will be put in.

Connecticut, Packerville. A proposition has been made by Philip E. Dudley, of Stamford, receiver for the Cutler Mills Company, that the creditors of the company allow the company to start up again in a few weeks. This would allow the company to pay dollar for dollar on indebtedness.

Georgia, Americus. The Board of Trade is reported making an effort to organize a company to establish a cotton mill at this place.

*Georgia, LaFayette. The Union Cotton Mills will increase the capital stock to $200,000 by Jan. 1st. At present they have in surplus and undivided profits some $225,000. Out of this they will pay a 100 per cent. dividend. Will not install any additional machinery. During the summer they increased the number of spindles to 18,200.

Georgia, Milner. W. H. Johnston is reported as investigating project of locating a cotton mill here.

Georgia, Rome. J. L., and A. E. Johnson, with others, are reported as interested in incorporation of the Concord Manufacturing Co., a new company with capital stock of $100,000. A cotton mill is proposed.

*Idaho, Pocatello. We have been advised by J. L. Lever, of Eureka, Cal., that he may establish the proposed mill at this place this coming spring.

Indian Territory, Chickasha. The Chickasha Commercial Club is reported interested in establishing a cotton factory at this place. A committee has been appointed to make investigations regarding the various kinds of mills. Among those mentioned as interested are: Howard Leech, Lawrence Martin and L. M. Potts.

*Maryland, Baltimore. The Calvert Cloth Co. has started operations making tourist cloths and ladies' cloakings.

Maine, Lewiston. It is reported that the Avon Manufacturing Co. has purchased a large building in which they propose installing machinery for a cotton mill, to employ about 300 people.

Massachusetts, Clinton. It is reported that the Belle Vue Mills are to be re-organized. W. A. Coggswell has recently acquired the controling interest in the plant. It is stated that Messrs. Pickford are making arrangements for starting a new mill.

Massachusetts, Fitchburg. The American Narrow Fabric Co., recently incorporated with capital stock of $25,000, is operating a plant at this place making garters of all kinds. Later they propose manufacturing the elastic webbing used. Plant will be removed shortly to Worcester, but the office will remain here, where all business will be transacted.

Massachusetts, Hopkinton. The Herminia Silk Mill will install new machinery in the plant as soon as the present equipment is in full operation. Scarcity of help has somewhat hindered enlargement.

Massachusetts, Hyde Park. The auction sale of the woolen mill of Robert Bleakie Company took place on October 31st. The property was offered in two lots. Lot A comprised 191 square feet of land with the mill buildings and machinery, also about 115,000 square feet of land with 14 double tenements and storehouse. This lot was started at $10,000, and the second bid of $11,000 being the highest received, this lot was withdrawn. Lot B comprised about 170,000 square feet of land with some tenements and a storehouse, and was sold to a local real estate man for $16,250.

Massachusetts, Lawrence. The Arlington Mills have been reported as having purchased additional buildings and land.

Massachusetts, Mansfield. The Wadsworth Braiding Co. has disposed of its plant to the Elmwood Mills, of Providence.

Massachusetts, Medway. A meeting of the stockholders of the Medway Woolen Company is to be held to consider operations of the mill.

*Massachusetts, Monson. We have been advised that the carding and spinning departments of S. F. Cushman & Sons' mill have only been closed temporarily.

Massachusetts, North Adams. It is reported that Mr. Purnell of Pittsfield has leased temporary quarters in the Broadley Mill and will equip same for manufacturing warps and silk novelties.

*Massachusetts, North Oxford. Repairs are being made to the Huguenot Mills recently purchased by F. Thayer, of the Thayer Woolen Co. Operations will be started up as soon as possible by the Thayer Woolen Co., with E. F. Thayer, formerly at the Piedmont Mills, in charge.

*Massachusetts, Palmer. A project is under way for purchasing the plant of the Grosvenor Woolen Company and putting same in operation.

*Massachusetts, Watertown. The Watertown Worsted Co.'s plant has been sold and will be used for another trade.

Michigan, Lansing. A project is under way for establishing a binder twine mill at the Jackson prison. The matter is being considered.

Mississippi, Corinth. It is reported that a company has been organized with capital stock of $100,000 to build a cotton mill at this place, with equipment of 5,000 spindles. W. C. Frost of Athens, Ala., is reported in charge of the plans.

*Mississippi, Wesson. Nothing has yet been definitely decided regarding the Mississippi Mills, recently sold to M. Stern. In the meantime the mills will continue as usual. The receiver of the mills hopes soon to dispose of all the finished goods, raw stock, etc., to the purchasers of the

mills and after this is done, the receiver's certificates will be retired and creditors advised as to the financial status of affairs of the mills.

New Jersey, Camden. The Merrimac Manufacturing Company has been incorporated with capital stock of $125,000 for purpose of manufacturing underwear, knit goods, silks, etc. Melvin M. Garrison, Harry Walker, and Geo. E. Myer, the latter of Haddonfield, are interested.

*New Jersey, Lakeview. The Walser Manufacturing Co., Inc., $100,000, is to operate the building at this place, with an equipment of 200 braiders. Company is located at 19 E. 21st, near Broadway.

New Jersey, Paterson. The Haledon Throwing Co. has been incorporated with capital stock of $25,000. Xavier Bossart is mentioned as interested.

New Jersey, Paterson. The Seneca Silk Co. has been reported incorporated with capital stock of $125,000 for manufacturing silk and textile fabrics. W. C. Lucas, F. H. Mayhew and E. A. Lucas (Paterson), are interested.

New York, Gloversville. The Silk Floss Co. has been reported incorporated with capital stock of $10,000. W. A. Weil, P. Weil and H. Lowenthal are among those mentioned as interested.

New York, Hornellsville. The DeWitt-Boag Co. has been reported incorporated to manufacture silk goods. Capital stock is placed at $10,000. B. C. DeWitt, E. H. DeWitt and R. M. Smith are mentioned as the incorporators.

*New York, New York. The business offices of the Union Winding Company recently reported incorporated, are located in the New York Life Building, room 628. H. L. Dinkelspiel is president of the company; H. E. Greene, vice-president and H. L. Greene, secretary and treasurer.

*New York, Jamestown. The Greenwood Worsted Mills have been incorporated with a capital of $150,000. The company will manufacture dress goods, suitings, etc., and has for its incorporators E. Greenwood and J. E. Pitts, of Jamestown, and G. E. Feather, of Cleveland, Ohio.

New York, St. Johnsville. The Union & Royal Company, which has been reported incorporated, has been formed as the selling agents for the Royal & Gem Mills. The capital stock is $10,000; William Endicott, Jr. (Boston), J. H. Reaney (St. Johnsville) and J. L. Moore (Fort Plain) are the incorporators.

North Carolina, Charlotte. The American Warp Drawing Machine Co., of Boston, has established a Southern office at this place to take care of their growing Southern business. E. F. Hathaway, general manager of the company, is now in the South giving attention to this matter. Charles Mars will be at the head of the Charlotte office.

Ontario, Lethbridge. The woolen mills at Medicine Hat have been reported as removed here where they will be operated under the name of the Lethbridge Woolen Mills Co. A new building, 90 by 60 feet, 3 stories, is under construction.

*Oregon, Sellwood. It is reported that the Ross Wool Co., which has been established here on site of the Portland Woolen Mills, will shortly start manufacturing woolen fabrics. A new dye and picker house has been recently built.

Pennsylvania, Chester. The old Trainer Mill recently sold by Jos. H. Parvin & Co., of Philadelphia, will be operated by the N. Z. Graves Co., 3rd & Arch Sts., Philadelphia, who are large manufacturers of varnishes, etc. It is denied that the mill be used for the manufacture of textiles of any kind.

Pennsylvania, Harrisburg. The Harrisburg Woolen Mill has been sold to David Fleming of the Harrisburg Foundry & Machine Works for $25,000.

Pennsylvania, Philadelphia. The Krout & Fite Manufacturing Co., with George W. Krout, John E. Fite and Jules Bloch, as its incorporators, have applied for a charter. The concern, which is well known as manufacturers of bindings, narrow fabrics and tapes, is located at 3158 Emerald Street.

Pennsylvania, Wind Gap. The Crown Silk Co.'s mill and real estate has been purchased by Charles J. Knowles of the Stewart Silk Co.

Pennsylvania, Philadelphia. James S. Gould has succeeded to the business of C. & J. Gould, operating 100 knitters at Kensington Ave. and Huntingdon St. The plant is now run on fine cotton and cashmere half hose for men and reports an exceedingly good business. The production is sold through E. M. Townsend & Co., New York.

Pennsylvania, Philadelphia. James E. Mitchell Co., well known as commission merchants and dealers in cotton yarns, whose main office is at 122 and 124 Chestnut Sts., Philadelphia, and branch offices at 185 Summer St., in the Brown Building, Boston, Mass., and 73 Leonard St., New York City, on the first of September opened up an office at 25 South Tryon St., Charlotte, N. C., with A. C. Hutchison in charge as manager.

Pennsylvania, Philadelphia. A notice has been issued to the effect that a limited partnership has been entered into by Joseph C. Stinson and Thomas Stinson, as general partners, and the estate of Thomas D. Stinson and Samuel B. Stinson as special partners, the firm to be known as Stinson Bros. The firm is now operating the large mills at Huntingdon, Fairhill and Reece Sts., with 120 looms on tapestry and velvet carpets.

Pennsylvania, Philadelphia. The trustees of the Estate of Nicholas Bilger, deceased, who have been endeavoring to sell the plant have now decided to continue it in operation as heretofore, and are looking for other quarters in which to remove the machinery. The plant, which is now located at 113 and 115 Bread Street, contains 11 looms which are operated on cotton, worsted and jute webbing.

Pennsylvania, Philadelphia. Harry Belcher, manufacturer of table damasks on 8 looms at 4060 Orchard Street, Frankford, it is reported has made an assignment. The plant has been shut down for several months on account of a strike.

*Pennsylvania, Philadelphia. The Industrial Mills Co., manufacturers of silk, cotton and mercerized narrow fabrics, one of the new companies recently established in this city, reports that its plant is now almost fully equipped with its machinery. They have 20 looms in operation and claim to have almost as much work as they can handle. The capital of the concern is $100,000. W. A. Dickel, well known as a carpet manufacturer in this city, is president, and Ivan B. Scovill, vice-president, general manager and superintendent.

Pennsylvania, Philadelphia. The Wick Narrow Fabric Company, with John E. Wick, Walter Borton and Frank Barras, has applied for a charter. The company, which has its office and warerooms at 708-710 Market St., is one of the largest manufacturers and selling agents of tapes, braids, twines and ribbons in this country, having mills in Paterson and this city.

Quebec, Treholm. Mr. Blanchette has purchased the woolen mill which he operates from Albert Hepworth.

*Rhode Island, Allenton. The Belleville Woolen Mills have been purchased by J. C. Fletcher, at public auction, for $25.000. The mill is to be put in operation about January 1st, making woolen goods.

Rhode Island, Central Falls. The Farwell Worsted Co.'s mill has been sold to the Bryant-Marsh Company, of New York, who will equip same with machinery for manufacturing electric incandescent lamps.

Rhode Island, Drownville. The Anawamscott Mills are not in operation making absorbent linen as has been reported. Nothing definite has yet been settled and the plant is idle at present.

*Rhode Island, Wickford. The Wickford Worsted Mills, which have been reported closed, are in operation, but will be discontinued by Mr. Fletcher January 1st, at expiration of present lease.

*Rhode Island, Woonsocket. We have been advised that a representative of a large concern in Tourcaine has visited Woonsocket several times recently and has returned to France to report. The owners will probably return with the party and look over the field. Although nothing definite has been decided, the company will erect a new plant in this country.

*South Carolina, Greenville. The McGee Manufacturing Co. is now operating their mill to its full capacity, including a new dyeing and finishing department.

South Carolina, Manning. It is reported that Scott Harvin is interested in establishing a knitting mill to employ negro help.

*South Carolina, Woodruff. The new mill in which W. S. Gray has been mentioned as interested, is for a cotton mill and not knitting plant, as has been reported.

Tennessee, Memphis. The Memphis Cotton Waste Co. has been organized with capital stock of $50,000 for manufacturing cotton goods from cotton waste, linters and batting. Among those mentioned as interested are A. L. Gardner, M. W. Allen, I. N. Rainey and Wm. H. Carroll.

Texas, Cuero. A committee has been appointed to canvass for subscriptions toward stock necessary for reorganizing the plant.

*Vermont, Proctorsville. A new partnership, under the old name, H. T. Murdock & Co., has been formed by H. T. Murdock and Jas. F. Syme. Will start Nov. 15th, making woolens for men's wear, selling through Faulkner, Page & Co.

Virginia, Strasburg. E. D. Newman (Woodstock), W. H. Newell, J. S. Stickey (Strasburg) have incorporated the Strasburg Textile Manufacturing Co. with capital stock of $100,000.

Personals.

John Mills, formerly overseer of weaving at the Montreal Cotton Mills, Valleyfield, Que., Canada, has resigned and accepted a position at the Boott Cotton Mills, Lowell, Mass.

Raymond S. Bartlett, who has held the position as superintendent of the Ray Mills, American Woolen Company, Franklin, Mass., has been appointed agent to succeed James F. Syme, who goes to Proctorsville, Vt.

Walter Walsh, who has been overseer of carding for the Montreal Cotton Company, Valleyfield, Que., Canada, has accepted a position with the Massachusetts Cotton Mills, Lowell, Mass.

G. W. Price, who has lately resigned with the Blackington Mfg. Company, will after December 1st identify himself with the Botany Worsted Mills as selling agent.

H. J. Rockwell has resigned as manager of the dress goods department of Stevens, Sanford & Jordan and has been identified with J. P. Stevens & Company, New York City.

Henry Wade, who has been second hand over the starching and finishing for the Clear Water Bleachery, Clear Water, S. C., has been promoted to the position as overseer. He has held the position for the past three years as second hand.

Jos. Miller, who has been employed for a number of years at Beebe & Webber's Mill at Holyoke, Mass., as overseer of carding, has resigned to accept a boss carding position at Calvert Cloth Co., Baltimore, Md.

Oscar Detrick, designer at the White Mill for Wm. Pendergast, Pascoag, R. I., has resigned.

Edward Nelson, who has been employed in large mills in Lowell, has accepted a position as overseer of weaving for the Pequot Mills, Montville, Conn., succeeding Richard H. Fish.

Walter B. Taylor, formerly employed at the Southwark Company, Eighth and Tasker Streets, Philadelphia, Pa., has accepted a position as overseer of finishing at the Cromwell Woolen Mills, Newcastle, Del.

F. L. Leavitt, overseer of dressing at the Boston Mfg. Company, Waltham, Mass., has resigned.

Chas. Elder, formerly of Spencer, Mass., has accepted a position as overseer of carding at the No. 4 Mills, Warren Cotton Mills, West Warren, Mass.

M. Woodard, formerly employed at the Assabet Mills, Maynard, Mass., has resigned and accepted a position as loom fixer at the Puritan Mills, Plymouth, Mass.

Richard H. Fish, overseer of weaving at the Pequot Mills, Montville, Conn., has resigned and accepted a position as overseer of weaving for the Montreal Cotton Company, Valleyfield, Que., Canada.

Wm. Merton Berry, formerly employed at Enfield, Mass., has accepted a position at the Hale & Frost Mills, Hinsdale, Mass.

Wm. G. Ratcliffe has accepted a position as manager of the woolen mill of Henry F. Scatchard Mfg. Company, Norristown, Pa. He was formerly superintendent of the Main Woolen Company, Old Town, Me.

P. F. Hanlan has severed his connection as boss finisher of the Madison Woolen Mill and will go to Worcester. The help in the finishing room called upon Mr. Hanlan at the hotel Monday evening and presented him with a beautiful cut glass smoking set.

Charles M. Suther, who recently resigned the superintendency of the Erwin Cotton Mills at West Durham, has been elected superintendent of the Golden Belt Cotton Mills at Durham.

J. A. Young has accepted a position as superintendent of the Tyger Cotton Mills, Fairmount, S. C.

Wm. L. Mills, overseer of beaming and drawing at the Warren Cotton Mills, West Warren, Mass., has resigned and accepted a position at the Boston Mfg. Company, Waltham, Mass., as overseer of beaming and dressing.

Chas. MacKenzie, who has been employed at Centreville, R. I., has accepted a position at the Merrimack Mfg. Company, Lowell, Mass., overseer of the white room.

Chas. E .Safford, overseer of finishing at the Chace Woolen Mills, Waterville, Me., has resigned and accepted a position at South William, Me.

Thos. T. Somerville has accepted a position as overseer of finishing at North Vassalboro, Me. He was formerly employed at Stafford Springs, Conn.

Ernest Hill, overseer of spinning at the Dawson Mfg. Company's Mill, Holden, Mass., has resigned his position and accepted one at Lowell, Mass. L. H. Corey of Ludlow, Vt., succeeds Mr. Hill at the Dawson Mfg. Company.

E. H. Pero, formerly overseer of finishing for Meek Bros. Company, Bonapart, Ia., has accepted a position at the Zanesville Woolen Mfg. Company, Zanesville, O.

John Mulligan, who has been employed for seveeal years at A. Roberts & Company at Claremont, N. H., has again accepted a position as overseer of weaving at their mill.

Wm. Petherbridge has accepted a position as boss dyer for the Belle Vue Mills, Clinton, Mass., succeeding Walter Pickford, who has held this position since the organization of the company.

Alfred R. Gleason, a woolen manufacturer of Gleasondale, Mass., has been elected president of the Hudson National Bank, Hudson, Mass., at a recent meeting of the directors to fill the vacancy caused by Jos. S. Radley, who retires on account of ill health. John H. Roberson was elected vice-president to fill the vacancy caused by Mr. Gleason's promotion.

John J. O'Neil, a graduate of New Bedford Textile School, has accepted a position as superintendent of Eclipse Knitting Company, Reading, Pa.

Benjamin W. Washburn, boss dyer at the American Woolen Mills, Franklin, Mass., will go to Proctorsville, Vt., with James F. Symes to take charge of the dyeing at the mill in that town.

B. F. Barnes has accepted the position as superintendent of the Fulton Bag & Cotton Mills, Atlanta, Ga. He was formerly connected with the Olympia Mills, Columbia, Ga.

Elmer E. Stevens, who has been employed at the Glenlyon Dye Wks., Phillipsdale, R. I., has accepted a position as second hand in the singeing department of the Merrimack Mfg. Company, Lowell, Mass.

A. T. Nuttall has accepted the position as superintendent for the new mill which is being built at Alexandria City, Ala. He was formerly at the Brookville Mills, Hickory, N. C.

Henry Hamel, formerly employed at the Jamesville Woolen Mills, Worcester, Mass., has been engaged as overseer of carding for the Dawson Mfg. Company, Holden, Mass.

John H. McDowell has resigned his position as superintendent of the Gastonia Mfg. Company, Gastonia, N. C., and has been succeeded by John Crites, who is also superintendent of the Avon Mills.

Thos. B. Odell, overseer of carding for the Willington Woolen Mills, West Willington, Conn., has resigned.

Robert Curlee has been promoted from second hand to overseer of carding at the Erwin Cotton Mills Company, Durham, N. C.

Chas. R. Newton, who has held the position as superintendent and designer for the Garland Woolen Company, Staffordville, Conn., has resigned to accept a position as superintendent of the Ray Mills, American Woolen Company, Franklin, Mass.

J. J. Knowles has accepted the position as overseer of weaving in the Flood Cotton Mills, Rome,

Ga. He was formerly employed at the Massachusetts Mills at Lindale, Ga.

M. D. Hall, formerly employed at Fort Plain Ktg Co., Fort Plain, N. Y., but more recently overseer of knitting for the Oxford Knitting Mills, Barnesville, Ga., has resigned his position and returned to New York.

J. J. Ward, who recently resigned his position at the Elizabeth Mills, Egon, Ga., has again re-entered the employ of the Warrenville Mfg. Company, as superintendent.

James H. Harvell, formerly second hand in the carding room of Haskins Mill, Charlotte, S. C., is now overseer of carding at the Louis Mills of the same city.

L. L. Clippard, who has been superintendent of the Cherokee Mfg. Company, Cherokee, S. C., has resigned and has been succeeded by Mr. Gardner.

B. F. Pollard, who recently resigned his position as overseer of carding at the Flood Cotton Mills, Rome, Ga., has accepted a position as overseer of carding at the Aragon Cotton Mills, Aragon, Ga.

R. G. Mims has accepted a position as overseer of weaving in the duck department of the Aragon Mills, Aragon, Ga.

C. H. Garton, superintendent of the Columbus Mfg. Company, Georgia, has accepted a position as superintendent of the Aragon Cotton Mills, Aragon, Ga., succeeding H. G. Smith.

E. H. Ellenberg, who has been employed at the American Textile Company, at Cartersville, Ga., is now overseer of spinning at Trion, Ga.

I. N. Dunn, formerly employed at Warrensville, S. C., has accepted the position as overseer of weaving at Aragon, Ga., succeeding Mr. Lamb.

J. S. Lamb has again taken charge of the weaving at the Avondale Mills, Birmingham, Ala. He was recently employed at Aragon, Ga.

E. A. Mitchell has accepted the position as superintendent for the new company that has taken over the Central Woolen Mills, Stafford Springs, Conn. He was formerly engaged by the A. B. Paton Mfg. Company as superintendent.

Wm. Wayness, Jr., has accepted a position as overseer of dyeing at the woolen mill at North Dexter, Me. He was formerly employed at the Pioneer Mills, Pittsfield, Me.

Edward Downey of Enfield, N. H., has accepted a position with the Atlas Linen Company of Meredith, N. H.

Moses George, who formerly held the position as superintendent for C. M. Davis Woolen Mills, Northfield Falls, Vt., has again re-entered their employ as superintendent.

L. M. Wallace, overseer of finishing for the Massasoit Woolen Mills, Huntington, Mass., has resigned and accepted a position at Chicago, Ill.

John W. Gledhill has accepted a position as overseer of finishing in the Chace Woolen Mills, Waterville, Me.

D. D. Hamilton, general manager of the Brookville Woolen Mills, Brookville, Pa., has resigned.

Jos. Brooks has again re-entered the employ of the Hamilton Mills, Amesbury, Mass., as overseer of spinning. He was formerly employed by this mill for a number of years.

John H. Sexton has accepted a position as loom fixer for the Salts Textile Company, at Norwalk, Conn. Geo. H. Flannigan, formerly employed by the Hodges Fibre Carpet Company, Indian Orchard, Mass., has accepted a position with the Salts Textile Company of this town.

Henry F. King, formerly employed as clerk in the office of the New Market Mfg. Company, New Market, N. H., has accepted a position with one of the American Woolen Company's Mills, Lawrence, Mass.

Patrick Silk, overseer of finishing for the Tremont Worsted Company, Methuen, Mass., has resigned.

Geo. N. Smith, overseer of carding and spinning for the Camden Woolen Mills, Camden, N. Y., has been engaged to overseer the carding and spinning for the Franklin Woolen Mills, Franklin, Ky.

John J. Lenahan, overseer of finishing for the Pawcatuck Woolen Mills, Potter Hill, R. I., has been engaged as boss finisher for the Oneko Mills, New Bedford, Mass.

A. L. Remington, boss dyer for the Oella Mills, Oella, Md., has resigned and returned to Philadelphia. He has been succeeded by A. Cullan.

Thos. Battye, formerly employed at Penacook, N. H., has taken charge of finishing for A. Roberts & Company, Claremont, N. H.

Samuel F. Winsper, superintendent for the City Mfg. Company, New Bedford, Mass., has resigned and accepted the superintendency of the Bennett Mills of the same city.

Chas. Shires, who has been designer at Dickeyville, Md., has been engaged with the Montreal Woolen Mills, Montreal, Canada, as designer.

John Lyons, who has held the position as second hand in the finishing room under his father for a number of years at the Weybosset Mills, Providence, R. I., has accepted a position as overseer of finishing at the Sawyer Mills, Dover, N. H.

Benjamin Washburn, boss dyer at the American Woolen Company's Mills, Franklin, Mass., has resigned to accept a position as overseer of dyeing at Proctorsville, Vt.

Frederick Gilbransen, formerly employed at the Windham Mfg. Company, Waltham, Mass., as overseer, died at the home of his daughter at Manchester, N. H., Friday, November 2.

Wm. J. Rollison has accepted the position as overseer of finishing for the Pawcatuck Woolen Mills, Potter Hill, R. I. He was formerly employed at Coscob, Conn.

Wm. Barton has accepted the position as overseer of the beaming and drawing-in department of the No. 1 Mill, West Warren, Mass.

Jas. Henderson, superintendent for the Ludlow Mfg. Associates, Ludlow, Mass., has been ap-

pointed by the trustees as acting agent during the absence of Sidney Stevens, agent of this firm.

Wm. O. Hall of North Attleboro, Mass., has been appointed superintendent of the Armstrong Braiding Company, Sandwich, Mass.

J. V. Rountree has accepted the position as overseer of carding at the Barker Mills, Mobile, Ala.

O. O. Newsom has been appointed overseer of weaving in the Union Cotton Mills at La Fayette, Ga.

Frederick Mack has accepted a position as loom fixer for the Bay State Worsted Mills, Worcester, Mass. He was formerly employed at the Aetna Mills, Watertown, Mass.

W. H. Cox has accepted the position as overseer of spinning and twisting in the Odell Mills, No. 1, at Concord, N. C.

David Glass, superintendent of the Olney Woolen Company, Cherry Valley, Mass., has resigned his position after a number of years of valuable service.

Ralph J. Wicks, formerly of E. Dedham, Mass., has accepted a position for the Riverside Woolen Mills, Stafford, Conn., as overseer of carding.

Wm. C. Bennett, formerly employed at Riverpoint, R. I., but more recently at Pittsfield, N. H., has accepted a position as overseer of carding at the Steam Mills, Newburgh, N. Y.

Orlando W. Wall has accepted a position as assistant designer at the Jamestown Worsted Mills, Jamestown, N. Y. He was formerly employed at Woonsocket, R. I.

E. L. Thompson has accepted the position as overseer of weaving at the Calvin Mills, Charlotte, N. C. He was formerly employed at the Highland Park Mfg. Company.

Edward Taft, formerly employed at the Glendale Woolen Mills, Glendale, R. I., has accepted the position as superintendent of the White Mill, Wm. H. Pendergast, Bridgeton, R. I., succeeding Oscar Detrick, who resigned.

Henry D. Bailey, superintendent for the Stanley Woolen Company, Uxbridge, Mass., has resigned and accepted the position as superintendent of the Oella Mills, Oella, Md.

Thos. Kenney, overseer of finishing for the Stanley Woolen Company, Uxbridge, Mass., has resigned and returned to his home at Potter Hill, R. I.

H. P. King has accepted a position as assistant superintendent for the Holston Mfg. Company, Lenoir City, Tenn. He was formerly employed at Pawtucket, R. I.

Alonzo P. Bacon, overseer of carding for the Saugus Woolen Mills Company, has resigned and accepted the position as overseer of carding for the Jewell Brook Mills, Ludlow, Vt.

C. T. Booth has accepted the position as overseer of carding and spinning for J. B. Clark Company, Rochdale, Mass. He was formerly employed at Rockwell Mills, Leominster, Mass.

James H. Hendrey, who has been superintendent of the Canadian Woolen Mills Company, Carlton Place, Ont., Canada, but more recently with the Brookville Woolen Mills, Brookville, Pa., has accepted a position as superintendent of the California Woolen Mills Company, California, Mo.

Thos. I. Dobson has accepted the position as designer for the Ashland Mfg. Company, Dickeyville, Md. He was formerly employed as assistant designer at the Pioneer Mills, Pittsfield, Me.

Vernon L. Peace has accepted the position as overseer of weaving for the Strathmore Worsted Mills, Concord Junction, Mass. He was formerly employed at the Saxton's River Woolen Mills, Saxton's River, Vt.

Gustave F. Sagan has accepted the position as overseer of weaving for the Niantic Mfg. Company, East Lyme, Conn.

G. F. Hussey has accepted the position as overseer of dressing and spooling at the Nanquit Worsted Mills, Bristol, R. I. He was formerly employed at the Sawyer Mills, Dover, N. H.

F. J. Dorsey has succeeded David Glass as superintendent of the Olney Woolen Company, Cherry Valley, Mass.

Allen Osborn has accepted the position as designer in the Starthmore Worsted Mills, Concord Junction, Mass. He was formerly employed at the Weybosset Mills, Providence, R. I.

Benjamin E. Humphrey has accepted the position as overseer of weaving in the Princeton Mills, Trenton, N. J. He was formerly employed at Pittsfield, Mass.

Wm. H. Hassett, formerly superintendent for the Hudson Blanket Mills, Hudson, Mass., is now salesman for the Salkeld Bros. Dept. of Fred'k Vietor & Achelis, cotton yarn, Leonard St., New York.

J. E. Sexton has accepted the position as master mechanic for the Danielsonville, Cotton Mills Co., Danielson, Conn. He was formerly employed at Derby, Conn.

J. H. Crabtree has accepted the position as overseer of dyeing at the Ray Mills, American Woolen Company, Franklin, Mass., succeeding Benjamin S. Washburn, who goes to Proctorsville, Vt.

Jas. Kennedy, formerly employed at the Mayo Woolen Mills, at Millbury, Mass., has been engaged as boss dyer for the Riverside Mills of Stafford, Conn.

Geo. Cane, formerly superintendent at Camden, Me., but more recently with the Riverside Woolen Mills of Stafford, Conn., has resigned.

Herbert Thompson has accepted a position as overseer of combing at the Lymansville Mills, Lymansville, R. I. He was formerly engaged at the Atlantic Mills of Olneyville, R. I.

Geo. W. Burr, formerly overseer of finishing at the Granite State Mills, Guild, N. H., has resigned and accepted a position as boss finisher at the Bramton Woolen Mills of Newport, N. H.

Chas. Poore has accepted the position as superintendent of the Victor Cotton Mills, Charlotte, N.

C., succeeding Fred Comnock. Mr. Poore comes from Anderson, S. C.

F. M. Roan, formerly at Carterville, Ga., has accepted a position as superintendent of the Johnsboro Yarn Mills, Johnsboro, Tenn.

Thos. Hays has accepted a position as overseer of carding at Hopeville Mfg. Co., Worcester, Mass.

M. J. O'Brien, formerly employed at the West Willington, Conn., Woolen Mills, has accepted a position as overseer of carding at the Ellis & Ricketts No. 3 Mill, Munson, Mass.

Jos. Priestley has been promoted to the position as overseer of weaving by Ellis & Ricketts, No. 2 Mill, at Munson, Mass. J. A. Andrews, formerly in charge of weaving at this mill, has been appointed assistant superintendent.

Patrick Hetherman has accepted the position as overseer of weaving at the Chapel Mills, Cherry Valley, Mass. He was formerly employed as loom fixer at the E. G. Carleton & Sons of Rochdale, Mass.

John Kaye has accepted a position as overseer of dyeing for the Vassalboro Mills, American Woolen Company, North Vassalboro, Me., to succeed John Fisher, who lately resigned.

Jos. Leach, overseer of weaving at the Daniels Worsted Mills, Worcester, Mass., has resigned his position after five years' valuable service. Mr. Leach started in as cloth percher and by hard, strenuous work and strict attention to business proved that he was capable of filling the position of boss weaver. He leaves with the best wishes of the help employed under him. Sam Wise of Lawrence, Mass., succeeds him.

Wm. Low, for a number of years superintendent of the Lovehill Mills, of the C. G. Wood Mfg. Company, has resigned and will be succeeded by Thos. Rivers, Jr.

Louis Zanger, from the Falls City Woolen Mill of Louisville, Ky., has taken a position as boss finisher for the Zanesville Woolen Mfg. Company, Zanesville, Ohio.

Benjamin Oliver, loom fixer at the Assabet Mills, Maynard, Mass., has accepted a position as fixer at the Aetna Mills, Watertown, Mass.

Edward Magner, boss dyer at the Thayer Woolen Company, North Oxford, Mass., has resigned and the vacancy is being filled by Peter Degnan, formerly dyer at the Pondville Woolen Mills, Auburn, Mass.

Harry Rettger, who formerly operated a broad silk plant in Paterson, N. J., has accepted a position with J. H. & Chas. K. Eagle, who sells for the Shamokin silk plant.

John Brisette, assistant dyer at the Ray Mills, American Woolen Company, Franklin, Mass., has accepted a position at Proctorsville, Vt.

W. L. Myrick, at present secretary and treasurer of the Dickson Cotton Mills and Scotland Neck Cotton Mills of Laurinburg, has accepted the office of secretary and treasurer for the Cotton Manufacturers' Association of North Carolina and will have his office at Charlotte, N. C.

Walter L. Smith, confidential man and bookkeeper for the Victory Mfg. Company, Victory Mills, N. Y., has severed his connection with that firm. He was presented with a beautiful rocking-chair by members of the reformed church.

Maxton Holmes has been elected acting treasurer for the Shetucket & Falls Company of Norwich, Conn., succeeding the late Gen. Wm. G. Ely.

Bert King, overseer of dyeing at the Rock Mfg. Company, Rockville, Conn., has resigned his position. He was formerly employed at Stafford Springs, Conn.

P. F. Hanlin, formerly overseer of finishing for the Madison Woolen Mills, Madison, Me., is now overseer of finishing for the Belvidere Woolen Mills, Lowell, Mass.

John J. Shea, formerly employed at Medway, Mass., has accepted a position as overseer of carding for the Concord Mfg. Company, Penacook, N. H.

Heaton Binns, of Lowell, Mass., has been engaged by the Shuttleworth Bros. Carpet Company to take the superintendency of the worsted spinning department of the mill. This is an entirely new department in the mill and the machinery is now being installed in the east mill recently purchased of the American Woolen Company.

Wm. H. Pettytt, overseer of dyeing at the Wakefield Mfg. Company, Wakefield, R. I., has resigned and accepted a position at the Middlesex Mills, Lawrence, Mass. E. Thompson, formerly of the Assabet Mills, Maynard, Mass., succeeds him at Wakefield, R. I.

J. M. Alexander, overseer of weaving at the No. 2 Merrimack Mill, Huntsville, Ala., has resigned his position and is succeeded by H. G. Smith of Aragon, Ga. G. W. Gurley, second hand in the weave room under Mr. Alexander, has also resigned and has been succeeded by W. A. Kohn.

Arthur Smith has resigned his position as assistant designer at the Walworth Bros., Lawrence, Mass., to accept a position at the Pemberton Company.

W. Marshal Taylor, superintendent of the Indian Orchard Flax Company of North Brookfield, Mass., has severed his connection with that firm.

Deaths.

John Clute of the Campbell & Clute Machine Co., Cohoes, N. Y., died Nov. 2d at his home in that city at the age of 76. He had been in failing health for some time. In his early manhood he came to Waterford and learned the trade of machinist and soon formed a partnership with the late Geo. Campbell under the style of Campbell & Clute. They were among the pioneer knitting machine builders. This firm continued until Mr. Campbell's death in 1900, when the Campbell & Clute Machine Co. was incorporated with Mr. Clute as president and treasurer. He was a man of public spirit and interested in other business in philanthropic enterprises of his city. He was

at one time president of the Mechanics Saving Institution and at the time of his death was president of the Manufacturers' Bank; a Director of the Home Telephone Co. and the United Traction Co. For years he took an active interest in municipal affairs and served on numerous commissions. He is survived by two married daughters.

Emil Sutro, senior member of the firm of E. Sutro & Company, hosiery manufacturers of Philadelphia, died October 27th. He was born in Germany, 1832, and came to this country in 1850. He joined his brother, Adolph Sutro, who was one of the pioneers in California. After spending some time in the West, he returned to Philadelphia and in 1880 formed the company of which he was senior member.

Richard Harrison, president and treasurer of the Harrison Yarn & Dyeing Co., Pawtucket, R. I., died at his home in that city, November 5, in his 80th year. He was one of the first men to dye worsted braids in this country. He was born March 29, 1827, in England. He came to Rhode Island when 21 years of age and obtained a position as boss dyer at the Kenyon Mills. In 1856, he went to Voluntown, Conn., as boss dyer for the Briggs Mfg. Company. He was also employed a number of years at Greene & Daniels Mill at Pawtucket, R. I., and has been in business for himself since 1883.

Michael S. Holley died at his home 24 Lagrange St., Worcester, Mass., November 11th, of heart trouble. He had resided in Worcester 18 years, coming from Enfield, N. H. He had been superintendent of the Southgate Woolen Company, So. Worcester, for a number of years. He leaves a wife, two daughters and one son. His burial was at Ware, Mass.

James Deeley, for 18 years overseer of the spinning department for the Taft Woolen Company, Careyville, Mass., died in that town recently. He leaves a brother and five children. His place has been filled by Michael Riley of Chepachet, R. I.

Benjamin D. Weeden, a retired cotton merchant and one of the best known citizens of Providence, R. I., died at his home November 21st, aged 71 years.

Owen Deady, a well known mill overseer, died at his home in Johnson, R. I., November 22d, after a brief illness. He was overseer of weaving for a number of years in mills in Rhode Island.

Mr. Edmund G. Edwards, a prominent manufacturer of Paterson, N. J., died Saturday at his home there of a complication of diseases, aged forty-eight years. He entered the employ of the Barbour Thread Works and several years later began the manufacture of jute twine with Thomas Sutherland, under the firm name of Sutherland & Edwards.

Thos. C. Ashley, one of the best known dyestuff and chemical dealers in New England, died at his home in Brighton, Mass., Friday, November 9th at the age of 59 years. Death was due to heart failure and came unexpectedly. He was born in New Bedford in 1847 and came to Boston when a boy. He found work in a dye house in this city. In 1872, he established the T. C. Ashley & Company concern, dealers in dyestuff and chemical, located at 145 Milk St. Mr. Ashley was a high mason and prominent in masonic circles.

Jos. Brook, managing director and treasurer of the Brook Woolen Company, Ltd., Simcoe, Ont., Canada, died October 26th.

Jas. B. McKenna, assistant superintendent of the Merritt Woolen Mills, Indianapolis, Ind., died at his home in that city. The cause of his death was heart failure.

Ewald Fleitmann, of the firm of Fleitmann & Co., commission merchants and manufacturers' agents in New York, died November 12th at his home in New York City in the 60th year of his age. Born in Westphalia, Germany, in the year 1846. Mr. Fleitmann came to New York when eighteen years of age to join his elder brother Hermann in business under the firm name of Fleitmann & Co. In his business enterprises he was a pronounced believer in the ultimate success of American textile manufactures and became a prominent promoter and organizer of silk mills, woolen mills, and Southern cotton mills. At his death he was a prominent figure also in the financial and charitable life of this city.

Wm. Maynard died recently at his home in Worcester at the age of 73 years. Mr. Maynard was a brother of the late Loranzo Maynard and father of Amory Maynard of Maynard, Mass. He was born in Littleboro and went to Maynard when but twelve years of age. When he became of age, he associated himself with his brother and father in the Assabet Mills. After the father's death, the business passed into the hands of the two sons. In 1884 Mr. Maynard's health failed him. He was obliged to go to California where he spent four years. In 1888 he returned to this state and took up his residence in Worcester where he has since lived.

L. Herbert Taft, for a number of years a prominent and well known citizen of Uxbridge, Mass., died at his home in Brookline, November 23, in his 60th year. Mr. Taft was born in Uxbridge and was the son of Moses Taft, a former manufacturer. He was educated in the public schools and was well versed in the manufacturing of cloth from his wide experience in mills owned by his father. When a young man, he entered a commission house in Boston and was later admitted a member of the firm of Taft, MacIntosh & Green, in which firm his father was senior member. He was director of the Blackstone National Bank, but resigned, owing to his failing health, last January. At the time of his death, he was stockholder in the Stanley Woolen Mills of Uxbridge and a generous given to the churches of his native town. Mr. Taft left Uxbridge about seven years ago and took up his residence in Brookline, Mass., where he married a Boston lady, who survives him. His death was due to Bright's disease. The body was brought to Uxbridge for burial.

Jas. Hover of Columbiaville, N. Y., died at his home in that town. He had been ill for about two weeks with typhoid fever. He was a well known business man and proprietor of a knitting mill.

New Publications.

[Any work noticed under this head can be obtained through the office of this journal.]

Proceedings of the Tenth Annual Convention of the American Cotton Manufacturers' Association, Asheville, N. C.

The report of proceedings of the Asheville convention of this association, held on May 16 and 17, 1906, forms a volume of 331 pages in which the various papers read on that occasion appear in full along with the discussions upon them. The usual list of officers, copy of the certificate of incorporation and by-laws are included, together with a list of the members.

Loom Tuning; by James Bailey, Headmaster of the Textile Department, Municipal Technical Institute, Keighley, England; Emmott & Co., Manchester, England. Price $1.25.

Most books on weaving deal with the construction of weaves and the general theory of the loom. This work, however, is a welcome departure in that its object is to deal with the practical running of the loom for the benefit of the fixers and weavers. The book is divided into chapters under the following heads: Shedding; Picking; Beating Up; Warp Protectors; Shuttle Changing Motions; Weft Stop Motions; Let-Off and Take-Up Motions; Selvages; Driving the Loom.

Various faults and difficulties arising in the operation of the loom are pointed out, together with the remedies for the same.

Textile Industry and Commerce (Textil-Technik und Textil-Handel); by Arthur Weiss; illus., 273 pages, 7 by 10; Franz Deuticke, Leipzig and Vienna. Price, $2.00.

This is a series of lectures delivered during the last two years in the commercial textile course of the Vienna Commercial Museum, where Herr Weiss is an instructor. The lectures have been rearranged to adapt them for book form, and are classified as follows: Mineral Fibres; Vegetable Fibres; Animal Fibres; Spinning; Weaving; Weave Construction; Embroidery; Knitting; Lace; Passementerie; Water; Washing; Bleaching; Dyeing; Printing; Mercerizing; Finishing.

As a matter of course these subjects are not treated exhaustively, but the lecturer has been very successful in giving a clear outline of the textile industry and trade, and at the same time including much detailed information as to technical processes and trade customs.

The parts dealing with weights and measures are involved in the Continental chaos of standards with which our readers are familiar, happily by information and not by experience. We find an indescribable mixture of old mediaeval standards mixed with metric and English weights and measures, the only redeeming feature of this section being the lead taken by the English system.

The volume forms a very useful handbook for the mill man and general reader as well as for the student. The text is in German.

Distinguishing Cotton from Linen (Die Unterscheidung von Baumwolle und Leinen); by Dr. Alois Herzog; Verlag fuer Textil-Industrie, Sorau, Germany. Price 50 cents.

A translation of this valuable pamphlet appeared in the October issue of this magazine. In addition to what appears in the translation the German pamphlet contains some very interesting colored plates showing the actual tints produced on cotton and linen cloth by treatment with the various reagents.

Color Effects in Fabrics (Die faerbige Gewebemusterung); by Franz Donat, Instructor in the technology of weaving at the Vienna Technical School; A Hartleben, Vienna and Leipzig. Price $3.00.

The production of color effects by combinations of weaves with color patterns in warp and filling has heretofore been treated by writers in connection with the general subject of designing. Herr Donat has wisely deemed it worthy of being made the subject of a special volume, which should be in the possession of every designer. In explaining the production of color effects in textile fabrics an author must rely mainly on weave drafts and colored illustrations. As a consequence there are but 45 pages of the explanatory text in German, while the illustrations, consisting of 580 weaves, 580 color effects and 5 cloth samples, occupy 76 pages. The illustrations are colored lithographs of the high standard with which readers of books on designing published by A. Hartleben are familiar, and covering single, double, 3-ply and 4-ply fabrics. The book is adapted to the needs of designers and students regardless of their ability to read German, because of the self-explanatory character of the lithographs.

A Century of Fine Cotton Spinning; McConnel & Co., Ltd., Ancoats, Manchester, England; George Falkner & Sons, Manchester, England; 56 pages. Price $1.00.

It is only in England, the birthplace of the modern cotton industry, that the material for such a work as this could be found. It relates to one firm, McConnel & Co., a company founded in 1790, and whose history covers the development of the industry since the invention of the steam engine and machines for spinning and weaving by power. Referring to the foundation of the business the author says: "At this date (1790) the cotton gin, which separates the staple from the seed; the carding engine, which cleans the cotton; the drawing and roving frames, which, by means of rollers revolving at different speeds, straighten the fibre and equalize the roving; and the mule, which spins the roving into yarn, had all been recently invented. The system of measuring yarn was leas and hanks and its nomenclature, based on the number of hanks in a pound weight, was by this time well established. Moreover, a few years previous to 1790, the improvements of the steam engine devised by Watts, had made practicable its use as a source of power."

The growth of the firm is traced from the beginning and there are many interesting comparisons and contrasts between present and past con-

ditions. Of especial interest are the extracts from the Manchester Mercury, letter books and account books of the firm. The book is fully illustrated with many excellent engravings and is a fine example of the printer's art.

Business Literature.

Lockers; Narragansett Machine Co., Providence, R. I.

In this catalogue is found a description of the various types of steel lockers manufactured by the Narragansett Machine Company. There are numerous illustrations of the various high-grade Narragansett lockers. Special attention is given to the details of construction.

Water Cooling Towers; De La Vergne Machine Co., New York City.

A folder containing a description and sectional view of the Klein water cooling tower built by the De La Vergne Machine Co., East 138th Street, New York City. It is claimed that these towers will cool the water from 5 to 15 degrees below the temperature of the atmosphere.

Wm. B. Scaife & Sons Company, Pittsburg, Pa.

A neat eight-page folder, the covers being reproductions of a scaled boiler-tube and of one which is clean. On the scaled tube is lettered "Is this Economy?"—on the clean tube, "This is Economy." The inside of the folder contains statements from some of their users regarding the savings effected in fuel and in the operation of their boilers. It also contains illustrations of some of their many installations. Wm. B. Scaife & Sons Company, manufacturers of "Scaife" and "We-fu-go" water softening and purifying systems, will be pleased to send a copy of this folder to any one interested.

Air Compressor Lubrication; Joseph Dixon Crucible Co., Jersey City, N. J.

This pamphlet contains much valuable information regarding the lubrication of air compressors and has special reference to the merits of Dixon's graphite for that purpose.

Plain Circular Knitting Machines; Crane Mfg. Co., Lakeport, N. H.

A very attractive catalogue in which are described and illustrated the various types of circular knitting machines built by this well-known firm.

Lubrication.

It is doubtful if there is any detail connected with the operation of the average plant more imperfectly understood by owners, their managers, and superintendents, than the lubrication of machinery. The mechanical installation may be of the highest known efficiency, everything may be done in the equipment of a plant to secure economy in its operation. After all this is done, frequently a long step is taken in the opposite direction by the use of a lubricant unsuited to the existing conditions. The object of a lubricant is not merely to secure quiet running of engines and machinery with temperatures of the bearings not alarmingly high, but, primarily, to reduce friction and wear to a minimum.

Few realize the great loss in power due to the friction of wearing parts. It may probably be fairly estimated that one-half the power expended in the average case is wasted on lost work, being consumed in overcoming the friction of lubricated surfaces. It is stated that a reduction of 50 per cent. in the work lost by friction has often been secured by a change of lubricants.

Among the expenses chargeable to waste power, due to inferior lubrication, may be included the cost of power produced in excess of that really required, and the wear and tear of machinery, which is constantly doing more work than should be required of it.

After many careful experiments and tests Adam Cook's Sons, 313 West Street, New York City, are confident that "Albany" grease contains the elements for perfect lubrication and is desirable and most economical for any bearing. They state that it is purely animal grease, free from all destructive acids, will lubricate and preserve the bearings of machinery thoroughly, as it has done for nearly forty years. Having comparatively low melting points for the different consistencies, it melts readily and thus lubricates, cools and preserves a bearing which from carelessness, inattention or the improper placing or setting of cups would otherwise burn or cut out and be practically destroyed by the use of greases with high melting points. Take, for instance, a grease with a melting point of 300 degrees and place it in open box bearing caps; the usual result is that the bearing will get hot almost to the melting point of the grease before it will flow over the bearing and lubricate it. This is getting pretty close to the danger point for babbitted bearings and if the heating be long continued will destroy them. Besides if the bearing should be neglected for a short time and not supplied with grease, a burned out bearing or a fire will be the inevitable result. Under the same circumstances, it is stated, No. XXX "Albany" grease, which is of the hardest consistency made, with the highest melting point, 175 degrees, would melt and flow over the bearing, lubricating and cooling it, on account of its peculiar properties, long before the heat of the bearing had reached the danger point.

Leather for Textile Work.

The L. M. Bowes Company of Boston and Philadelphia have recently completed their new plant for making worsted aprons, roll covering, etc., at their Boston works, Atlantic Ave., the newest American and imported machinery being used throughout, driven by electricity.

This firm have built up a very large business in the textile trade, are the largest importers of leather for this purpose in the country and have a reputation for selling high grade goods exclusively.

Orders for belting machinery have been placed and will shortly be installed, giving them one of the best equipped and modern plants.

A Softener for Knit Goods.

One of the best softeners for the hosiery and knit goods trade is that manufactured by the Wilmington Oil Co., Wilmington, Del. This company invite all knit goods manufacturers when about to place orders for softeners to communicate with them and secure a sample of their goods, with price, and they feel sure it will be the means of having them place their orders with them in the future.

Canadian Conditions.

A representative of the Textile World Record, who has recently visited Canada, reports that business there is good except in the textile industry, where conditions vary. In the knitting branch, the manufacturers as a rule are very busy, new mills being erected and old mills being enlarged. This condition of affairs does not prevail among the woolen manufacturers, however, as in several places mills have been closed for the last four or five years. This is because the English manufacturers can place their goods on the Canadian market at a price with which the Canadian manufacturers cannot compete. They have no fear of the manufacturers in the States, but English goods made by low-priced labor can be sold in Canada at prices below the cost of Canadian goods. Furthermore, English goods were for many years admitted at a preferential rate of 23 1/3 per cent., one-third less than the regular rate of 35 per cent. Recently the government increased the rate on English goods to 30 per cent. ad valorem, but it was too late, as the woolen industry was already in a crippled condition. It is the opinion of a great many in Canada that if they had both the ad valorem and the specific duties, as we have in the United States, it would be of great benefit to the Canadian industries.

Successful Air Drying.

"There is an element in successful air drying which is of the highest importance, but which is apt to be totally neglected by those not conversant with the principles of the subject. This is the velocity with which the air passes over the surface of the material. Experiment shows that the rate of transmission of heat communicated to a surface by a gas passing over it varies with the square root of the velocity, so that the higher the velocity the more rapidly will the evaporation take place. This effect is probably similar in some respects to scour on the beds of streams, though the equations in the two cases are unlike. The actual velocity is limited, on the other hand, by the fact that the power varies with the cube of the velocity; so that there will be found a certain velocity of maximum efficiency where these two elements balance. In the designing of the drying-room care should be taken that the proper volume of air not only passes through, but that it passes over the surface of the material at the most economical velocity; which necessitates in turn that the empty space in the drying room or chamber shall not be too great."—George Wetmore Colles, in Stevens Institute Indicator.

A New Needle Factory.

Not a new company, but a brand-new shop to accommodate the increased business of William Breedon's Son, of Amsterdam, N. Y., the well-known manufacturer of spring knitting needles of all kinds, burr, blades, hooks and rings for finishing. This concern has been in business for years and its needles are known to the knitting trade all over the country. On account of the high reputation of the product and the increase in the business the firm has been compelled to erect this new shop on the opposite side of the street from the old one. This building is two-story, built of brick, with an ell 60 by 25 feet to be used for the hardening and tempering department, and is entirely fireproof with concrete floor. The power is electric and the building is fitted with all the latest appliances for the proper handling of the business.

Without a Peer.

Of the innumerable winter resorts at which congregate the multitudes interested in social and out door pleasures, none is more prominent or popular than Lakewood. It is the rendezvous of the refined, an abode of persons who delight in good living and exquisite environs.

It is in New Jersey's famous pine belt, the health giving properties of which are renowned the world over. Lakewood is only 59 miles from New York and reached in nearly the same number of minutes via the New Jersey Central. Lakewood's hotels are the standard by which other winter resort houses are governed, and it is needless therefore to say that they are perfection. The schools at Lakewood rank high and for a winter's home there is no place better adapted. Booklet of Lakewood upon application to W. C. Hope, General Passenger Agent, New Jersey Central, New York City, Dept. Ad.

A Covering for Cold Water Pipes.

Considerable trouble, annoyance, and expense are caused in cold weather by the freezing of water pipes, especially when exposed to the outside air. The H. W. Johns-Manville Co. of 100 William Street, New York, have a covering, sold under the trade name of "Zero," which, it is stated, prevents freezing of pipes during cold weather. This covering consists of a combination of hair felt and wool felt, which possesses high insulating qualities. For ordinary conditions one layer of this covering is sufficient, but where pipes are exposed to the weather two thicknesses should be used.

The increasing sales of the new rotary type of high pressure blower recently introduced by the B. F. Sturtevant Co. of Hyde Park, Mass., are indicated by the following: Osgood & Witherbee, Charlestown, Mass.; Translucent Fabric Co., Quincy, Mass.; Michigan Lubricator Co., Detroit, Mich.; Scranton Stove Works, Scranton, Pa.; Otto Gas Engine Works, Philadelphia, Pa.; Gould Steel Plant, Depew, N. Y., and Amoskeag Mfg. Co., Manchester, N. H.

Gold Medals at Liege and Milan.

The International Winding Company, the European company which handles the Universal winding machines abroad, has just received the diploma of award of the gold medal for the recent exposition at Liege, Belgium. Notice has also been received that the gold medal has been awarded them for the Milan Exposition just closed. These awards cover the No. 50 self-oiling machine, with the new attachments of Fixed Gain and "Nutaper," which is making a very wide field for itself in Europe.

Soluble Softening Oil.

Manufacturers who are still using tallow as a softener are invited to investigate the results obtained with the soluble softening oil, made by the Arabol Manufacturing Company, 100 William St., New York. Among the advantages claimed for it are a smooth finish of the warps, easy parting of the threads in the lease rods, clean and bright appearance of the slasher cylinders. Especially fine results are obtained with strong and closely-woven goods, such as corduroys, velveteens, sateens, umbrella cloths, cambric wares, etc. The season is said to have no influence on soluble softening oil, which remains in sweet condition, uniform and pliable, summer and winter. It is neutral and easily handled.

A Good Mill to Rent in New Hampshire.

The Cole Manufacturing Company at Lakeport, N. H., are advertising a good mill property for rent. It is built for textile purposes, is 90 by 50 feet, five stories high and equipped with sprinklers; connected with the mill are a boiler house, picker house, dye house and dry house. The mill is run by water power, but has auxiliary steam power and is wired for electricity. It is all ready for machinery equipment.

A New Yarn Firm.

Herx & Eddy, Inc., is the firm name of a new yarn house that will be organized in December to do business at 113 Worth Street, New York, with branch offices in Philadelphia and Providence. They will have a paid up capital of $50,000 to start with, and facilities for increasing this as the business may require. The principal stockholders are Charles A. Herx, for many years head of the yarn department of James F. White & Co., New York, Jesse P. Eddy, Frank W. Tillinghast, and Walter F. Stiles of Tillinghast, Stiles & Co., Providence. The active management of the concern will be entrusted to Mr. Herx. Mr. Eddy has been treasurer of Tillinghast, Stiles & Co. for fifteen years and will continue to take an active interest in that company. The firm will handle a general line of Southern and Eastern yarns and with such active men with long experience in the selling of yarns we bespeak success for the new company.

Will Move Into New Quarters.

The Boston branch of the H. W. Johns-Manville Co. will move, early in December, into a new building at Nos. 55-57-59 High Street, Boston. This entire building, which comprises seven floors, will be occupied by the offices, sales and shipping rooms of the company, and will provide every facility for doing business comfortably, conveniently and promptly. Telephones connect with every division of the establishment and pneumatic tubes for prompt delivery of orders to the shipping room, etc., are being installed. The increase of space provided will enable the company to carry a much larger stock on hand than ever before and thus meet the steadily increasing demand in Boston and the New England states for their various products.

C. H. Boley Co.

The C. H. Boley Co. has been incorporated to carry on the business of the Read & Elwell Co., manufacturing chemists. Their office and works are at Randolph and Erie Avenues, Philadelphia. Their facilities have been increased and they are now prepared to fill all orders for their specialties promptly. Henry Scattergood is president; C. H. Boley, vice-president and superintendent, and William Brous, secretary-treasurer.

A Consulting Electrical Engineer.

Prof. William L. Puffer, who has recently retired from the engineering staff of the Massachusetts Institute of Technology, has opened an office at Room 307, Equitable Bldg., Boston, Mass., as an electrical engineer and expert.

Prof. Puffer has long been recognized as one of the ablest practical engineers connected with that part of the Institute work and is entitled to much credit in bringing the engineering equipment of the laboratories up to its present high development. He has been well known for years in connection with the annual meetings of the fire insurance inspection department experts in New York, stands high in his profession and is entirely free from connection with or obligations to any of the electrical companies. Consequently his opinions are unbiased and carry weight in a general meeting or special committee deliberations.

It is due chiefly to his guidance that the present rules and regulations applying to the use of high voltage and large mill plants have been framed so as to insure safety to both life and property, while allowing almost unlimited freedom in the use of electrical appliances.

Prof. Puffer's services can be secured for general consulting and expert work in connection with electrical engineering. He is prepared to act as electrical adviser in the choice and operation of light and power plants in determining the relative advantages of illumination of rooms where color values are important, and in making regular inspections and reports of the operative condition of electrical plants.

We take pleasure in recommending Professor Puffer to any mill desiring services of this character.

Robert W. Gormly & Company.

On a recent visit of our representative to the works of this company, located at Troy, N. Y., we found them very busy, taxed to their utmost capacity, turning out orders for their spring needle knitting machines. Among a number of orders recently booked is one from the Groat Knitting Co. of Scranton, Pa. This mill produces fleece-lined underwear, and has made for itself quite a reputation. In June they sent one machine there for trial, where it was given a severe test for five months. The performance of the machine during that time was so satisfactory to the Groat Knitting Co. that they have recently sent an order for 30 machines, on which the Gormly Company are now working. There is a possibility of further orders from the same source after these machines have been delivered. The Gormly Company are also very busy in their burr wheel department, and are turning out large quantities of this attachment.

New England Representative for Reeves Transmission.

The Reeves Pulley Company of Columbus, Ind., has appointed Elliott F. Aldrich New England representative for the Reeves variable speed transmission, particularly in its application to textile machinery. Mr. Aldrich has had broad experience in mechanical matters, and is a transmission engineer, not only in technical knowledge, but practical experience. He is a graduate of the engineering department of Cornell University, has served large concerns in important engineering capacities, and is therefore competent to undertake any transmission problems where the Reeves variable speed transmission may be of interest, not only in textile service, but in any of the multiplicity of applications where it may be used. Already Mr. Aldrich numbers as his customers for the Reeves transmission a large number of the largest textile finishing concerns of New England, including Merrimack Mfg. Co., Lowell, Mass.; Hampton Co., East Hampton; Textile Finishing Machinery Co., Providence, R. I.; Queen Dyeing Co., Providence; Cranston Print Works, Cranston, R. I.; Providence Bleaching, Dyeing and Calendering Co., Providence; Sayles Bleacheries, Saylesville, R. I.; Crompton Co., Providence; U. S. Finishing Co., Pawtucket; Wm. Wanton Dunnell, Apponaug, R. I.; Vacuum Process Co., Boston, and a great many others. Mail may be addressed to him, Box 21, Providence, R. I., and he will be glad to respond to any calls at any time for any nature of consultation involving the installation of the Reeves variable speed transmission.

The Valentine & Bentley Silk Co., Newton, N. J., is installing a special system for absorbing steam in its dye house. This consists of a steel plate fan with heater and a system of distributing pipe which permits of the circulation of large volumes of warm air which instantly absorb and render invisible the moisture in the air. The outfit is furnished by the B. F. Sturtevant Co. of Hyde Park, Mass.

David J. Ames & Co.

The needle business of David J. Ames & Co., Philmont, N. Y., is constantly on the increase and the quality of goods turned out by this concern is sure not only to make new customers, but to hold old ones as well. Mr. Ames is recognized as authority on the needle question and his product consists of spring needles of a high standard. He also manufactures highly polished burr plates and needles for cop, balbriggan and plush work.

Turbine Water Wheel Tests.

A paper of unusual interest to engineers and users of water power is a compilation of turbine water wheel tests and power tables that has just been issued by the United States Geological Survey as Water-Supply Paper No. 180. The results of tests of McCormick, Hercules, Samson, Swain, and other modern wheels by the Holyoke Power Company serve as a basis for the bulk of the data, but other test and manufacturers' tables have been utilized whenever available.

One object of the paper has been to furnish information required in measuring the flow of streams where the turbine is used as a water meter. The paper contains rating tables and the results of tests of different makes of turbines with register, pivot, or cylinder gates, so that the power developed at the mills and the quantity of water used can be determined from the size and type of the wheels. As the water rights of mills can often be definitely ascertained only from the quantity of water used, and as some of the wheels are no longer built or catalogued, the records of tests of the older types will be of great value to engineers who may be required to determine questions of water rights. The paper contains also a clear presentation of the evolution of the different types of turbines, all available data relative to the efficiency of the wheels and the power developed, a description of the best methods of turbine setting and arrangement, and a discussion of the conditions that govern the economy in size and number of turbines used.

This paper, which may be obtained on application to the Director of the United States Geological Survey, Washington, D. C., is probably the only published compilation of such data. Many wheels have been tested, but as a rule such work has been done for private parties and the results have not been available to the engineering public.

Converse, Stanton & Co. Add Yarn Department.

On January 1 the well-known firm of Converse, Stanton & Co., 83 Worth Street, New York City, will add a yarn department to their lines. They will sell a general Eastern and Southern line of cotton yarns and the department will be in charge of J. F. Conway, who has been for nearly twenty years with Catlin & Co., and is thoroughly familiar with the trade. Besides the New York office the firm will open offices in Philadelphia and Boston

Advance in Leather Belting.

Through the courtesy of the Shultz Belting Company we have been handed one of the revised price-lists, which was adopted November 21, 1906, and which goes into effect immediately.

This list has not been advanced in proportion to the advance of raw material, but in conference with various belt-makers it was agreed that a slight advance was necessary. Taking an average of this list as compared with the list that has been in use since 1901, it will be found that with the exception of 1 inch and 1 1/4 inch sizes, the advance is very slight.

The demand for belting has never been equalled in any previous year.

Following is the new list:

SINGLE PLY.

Inches wide.	Price per foot.	Inches w de.	Price per foot
1/2	$0.12	21	$5.04
5/8	.15	22	5.28
3/4	.18	23	5.52
7/8	.21	24	5.76
1	.24	25	6.00
1 1/4	.30	26	6.24
1 1/2	.36	27	6.48
1 3/4	.42	28	6.72
2	.48	29	6.96
2 1/4	.54	30	7.20
2 1/2	.60	32	7.68
2 3/4	.66	34	8.16
3	.72	36	8.64
3 1/4	.78	38	9.12
3 1/2	.84	40	9.60
3 3/4	.90	44	10.56
4	.96	48	11.52
4 1/2	1.08	52	12.48
5	1.20	56	13.44
5 1/2	1.32	60	14.40
6	1.44	64	15.36
6 1/2	1.56	68	16.32
7	1.68	72	17.28
8	1.92		
9	2.16		
10	2.40		
11	2.64		
12	2.88		
13	3.12		
14	3.36		
15	3.60		
16	3.84		
17	4.08		
18	4.32		
19	4.56		
20	4.80		

ROUND BELTS.

	Solid.	Twist.
1/8 inch	$0.05	$0.06
3/16 "	.07	.10
1/4 "	.10	.14
5/16 "	.14	.18
3/8 "	.18	.22
1/2 "	—	.30
5/8 "	—	.36
3/4 "	—	.46
7/8 "	—	.60
1 "	—	.72

DOUBLE BELTS TWICE THE PRICE OF SINGLE.

Lace Leather, per square foot,.....

CUT LACINGS.

1/4 in.	$1.25 per 100 ft.	1/2 in.	$2.25 per 100 ft.
5/16 "	1.50 " 100 "	5/8 "	3.00 " 100 "
3/8 "	1.75 " 100 "	3/4 "	3.75 " 100 "
7/16 "	2.00 " 100 "		

Exhaust equipment for slashers is being furnished by the B. F. Sturtevant Co. of Hyde Park, Mass. for Dennison Cotton Mills Co., Dennison, Texas; Tabor Mill, New Bedford, Mass.; Lockhart Mills, Lockhart, S. C.; and German-American Co., Draper, N. C.

The Textile Club.

The visit of the Textile Club to the Saco & Pettee Machine Shops at Newton Upper Falls, Mass., on Saturday, December 1, was a most enjoyable affair. The party left Boston on the 9.30 train and were met at the Newton Highlands station, where carriages were in waiting, and escorted by the officers of the company to the shops. The works were found to be running to their fullest capacity and many expressions of surprise and admiration were heard regarding the well-managed organization. After a long inspection of the machinery through the different stages of manufacture the entire party was driven to the Newton Club at Newtonville, where they were the guests at dinner of the Saco & Pettee Machine Shops. The menu which follows speaks for itself:

Canapè Caviar

Cape Oysters

Potage Westmoreland

Olives Celery Radishes

Timbale of Halibut, Oyster Crab Sauce

Pommes Duchesse Cucumbers

Filet Mignons, à l'Epicurienne

String Beans Potatoes Chateau

Frozen Tom and Jerry

English Plover, Currant Jelly

Waldorf Salad

Fancy Ices Cake

Camembert & Roquefort Cheese

Toasted Crackers

Demi Tasse

After the dinner the meeting took the nature of a business session, at which time the business of the club was disposed of and a few representative mill agents were elected members. The meeting and banquet were presided over most graciously by A. Tenny White, while the hosts of the occasion, R. Paul Snelling and Frank J. Hale, respectively treasurer and agent of the Saco & Pettee Machine Shops, sat at the right and left. After the coffee and cigars a social hour was spent at which time a number of reminiscences and subjects were presented which were well received by the gentlemen present. After many expressions of approbation on the part of the guests present at the meeting adjourned. A full list of the members and guests follows: E. E. Blake, S. N. Bourne, W. H. Cadwell, C. N. Childs, J. G. Childs, L. N. Denny, F. W. Ely, Wm. B. Filtz, Frank J. Hale, Wm. E. Hall, Chas. N. Holmes, D. L. Jewell, W. N. Kimball, H. D. Lord, Robert McArthur, R. S. Millikin, A. H. Morton, Frank L. Nagle, Wm. G. Nichols, O. E. Nutter, R. Paul Snelling, Samuel Stewart, C. A. Wakefield, A. Tenny White, George F. Whitten.

F. L. N.

Arthur Stead.

The mill supply and machinery business hitherto conducted by Arthur Stead, is still carried on by him alone. William Aveyard and Mr. Stead are together the sole agents for the L. M. Bowes Co., of Boston, and handle every description of fine leather for textile use, including roller leather, worsted aprons, rub aprons, etc.

Tompkins Brothers' Company, Troy, N. Y.

This company reports business in a most flourishing condition and that they are continually adding new customers to their already long list. In addition to home orders, they are exporting their machines and report business continually on the increase. The appearance of their works and their general air of prosperity verify their statements.

Recent Textile Patents.

COTTON LINTERS. Float Drive for. 835,538. Jacob W. Kimbrough, Dallas, Texas.

COTTON PICKER. 845,949. Robert W. Ivy, New London, N. C.

COTTON PRESS. 835,897. Horace A. Baker, Pecan Gap, Texas.

COTTON PRESS and Feeder. Automatic. 836,488. Frederick B. Cumpston, Blooming Grove, Texas.

DECORTICATING RAMIE and Other Fibrous Plants. Machine for. 835,412. Jean M. A. Faure, Limoges, France.

DYE-VATS. Apparatus for Circulating Liquids in. 836,101. Louis Dumons, Roubaix, France.

DYEING APPARATUS. 835,813. Stuart W. Cramer, Charlotte, N. C.

DYEING APPARATUS. 835,927. Thomas A. S. Wood, London, England.

DYEING MACHINE. 834,284. William H. Fletcher, Paterson, N. J.

FABRICS. Manufacture of Woven. 835,510. Jules Florin, Roubaix, France.

FIBRE DISINTEGRATING MACHINE. 836,126. James A. Morrison and Sidney O. Dickinson, Manila, P. I.

FIBRES OR ARTIFICIAL SILK. Manufacturing Textile. 836,620. Julien Vermeesch, Schaerbeek, Belgium.

LOOM AUTOMATIC Filling Replenishing Mechanism. 834,852. John Smith and E. S. Stimpson, Hopedale, Mass., assignors to Draper Co., Hopedale, Mass.

LOOMS. DEVICE for Holding Thrums or Knotting Threads in. 836,518. Emil Marschner, Grosspriesen, Austria, assignor to Schelling & Staubli, Horgen, Switz.

LOOM FILLING Detecting Mechanism. 834,546. Everett S. Wood, Hopedale, Mass., assignor to Draper Co., Hopedale, Mass.

LOOM FILLING Detecting Mechanism. 834,547. Everett S. Wood, Hopedale, Mass., assignor to Draper Co., Hopedale, Mass.

LOOM FILLING Detecting Mechanism. 834,585. Alida M. Marcoux, Hopedale, Mass., assignor to Draper Co., Hopedale, Mass.

LOOM FILLING Detecting Mechanism. 834,548. Everett S. Wood, Hopedale, Mass., assignor to Draper Co., Hopedale, Mass.

LOOM FILLING Detecting Mechanism. 834,549. Everett S. Wood, Hopedale, Mass., assignor to Draper Co., Hopedale, Mass.

LOOM FILLING Detecting Mechanism. 834,757. W. F. Roper, Hopedale, Mass., assignor to Draper Co., Hopedale, Mass.

LOOM FILLING Replenishing Mechanism. 834,930. Jonas Northrop, Hopedale, Mass., assignor to Draper Co., Hopedale, Mass.

LOOM FILLING Replenishing Mechanism. 833,796. Jonas Northrop, Hopedale, Mass., assignor to Draper Co., Hopedale, Mass.

LOOM FILLING Replenishing Mechanism. 834,945. E. S. Stimpson, Hopedale, Mass., assignor to Draper Co., Hopedale, Mass.

LOOM FILLING Replenishing Mechanism. Eli Benoit, Blackstone, Mass.

LOOM FRICTION LET-OFF. 834,170. Merrill O. Steere, Pawtucket, R. I., assignor to Brindle-Steere Co., Portland, Me.

LOOM FILLING Tension Means. 835,044. E. S. Stimpson, Hopedale, Mass., assignor to Draper Co., Hopedale, Mass.

LOOM. HAIRCLOTH. 834,000. Geo. S. Cox, Fitzwatertown, Pa., assignor to Geo. S. Cox & Bro., Philadelphia, Pa.

LOOM. KINDERGARTEN. 835,767. Jessie C. Tyndall, St. Louis, Mo.

LOOM PICKER. 836,073. Laurence Z. Forgues, Woonsocket, R. I.

LOOM. PILE FABRIC. 836,305. Edward S. Craddock, New York, N. Y.

LOOM SHUTTLE. 835,230. Arthur W. Saunders and Charles O'Neil, Lowell, Mass.

LOOM TEMPLE. 835,011. William J. Colbert and John J. Honan, Fall River, Mass.

LOOMS. Thread Parting Mechanism for. 834,269. Edward Cunniff, New Bedford, Mass., assignor to Draper Co., Hopedale, Mass.

LOOM WARP Stop Motion. 835,807. John T. Bolton, Fall River, Mass.

MEASURING MACHINE. Fabric. 835,601. James A. Cox, Brownsville, Oregon.

PILE FABRIC. Woven. 834,001. Edward S. Craddock, New York City.

SILK. Ungumming and Dyeing Raw Material. 836,464. Peter Schmid, Basel, Switzerland.

SPINNING MACHINE. 834,609. Thomas H. Fairchild, Selma, Ala., assignor to Lewis T. Houghton, Worcester, Mass.

TEXTILE GOODS. Finishing. 834,913. Paul Krais, Ilkley, England, assignor to The Bradford Dyers' Association, Bradford, England.

C. E. RILEY COMPANY

65 Franklin Street, .. BOSTON, MASS.

BUILDERS AND IMPORTERS OF

COTTON WOOLEN WORSTED

MACHINERY

DIRECT .. .. IMPORTERS OF **EGYPTIAN COTTON**

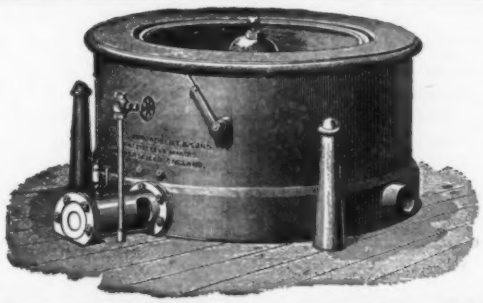
Thomas Broadbent & Sons,

Huddersfield, Eng.

PATENT DIRECT STEAM DRIVEN

HYDRO-EXTRACTORS

OVER 3500 IN USE. ALSO ELECTRICALLY DRIVEN



SUSPENDED ON LINKS. REQUIRING NO EXPENSIVE FOUNDATIONS

C. E. RILEY COMPANY, Sole Agents 65 Franklin St., Boston, Mass.

Machines Kept in Stock in Boston

Friction Load

You know the friction load of a mill, the power to turn belts and shafting alone, is high, from 20-50 per cent. of your total load.

Half of this is from tight belts.

Cling-Surface permits every belt to be run easy and carry fullest loads and turns this half from overcoming friction to doing work.

Besides preserving the belts, saving oil, labor and fuel, and giving steady, even speed at machines.

It is a belt food — not a sticky dressing.

A trial order will prove it. Send for one.

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199-205 Virginia Street Buffalo N Y

Boston: 170 Summer Street | New York: 39 Cortlandt Street | Philadelphia: The Bourse

Power, Lighting, Heating, Ventilating and Drying Complete New Plants Improvements and Extension to Old Plants
Economies in Power Developement, Transmission and Application. Economies in Steam Generation and Utilization

PRATHER ENGINEERING COMPANY

HENRY B. PRATHER, President

ROCKEFELLER BUILDING, CLEVELAND, OHIO

OUR SPECIALTIES

The design of the "Steam End" of Paper, Textile and Knitting Mills and other Factories. ECONOMIES in the "Steam End" of Mills already equipped. Improvement of Old Plants. Coated Paper and Other Drying Lithograph and Printing Establishments—Ventilation and Power Transmission.

We make a study of your conditions and arrangements for Steam Generation, Transmission, and Utilization in Drying, Water Heating, Lighting, etc., also your arrangements for Power Development, Transmission and Application, and suggest improvements and changes which will save you money by increasing your efficiency of operation and reducing the cost of production. **Saving in fuel cost.**

We should like to call and look over your plant. No charge for inspection. No proposition to submit to you unless we can guarantee results.

Our fifteen years experience in stoker, boiler, power, heating, ventilating and drying engineering, is basis of our advice to clients.

Buyers' Index.

The addresses of builders of mill machinery and dealers in mill supplies, whose names appear in the following classified index, may be found upon referring to their advertisement. The Alphabetical Index to advertisers follows this classified list. Buyers who are unable to find in these classified lists such machinery or supplies as they desire, are invited to communicate with the publishers, who can, in all probability, refer them to proper sources.

Advertisers whose names do not appear under desired headings will please notify the publishers. Such omissions are accidental, not intentional.

Acetylene Generators.
Wing, L. J., Mfg. Co.

Air Moistening System.
American Moistening Co.
Bell Pure Air & Cooling Co.

Architects and Mill Engineers.
Dean & Main.
Ferguson, John W.

Asbestos Materials.
Johns-Manville Co., H. W.

Asphalt Floors.
Simpson Bros. Corporation.

Asphalt Tanks.
Scaife, W. B., & Sons.

Automatic Feeds for Cotton and Wool.
American Drying Machinery Co.
Harwood, Geo. S., & Son.
Hogg, Jas., Machine Co.
Kitson Machine Co.
Leigh, Evan A.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Schofield, Wm., Co.
Woonsocket Machine & Press Co.

Automatic Warp Tying Machines.
Barber-Colman Company.

Bale Ties.
DeHaven Manufacturing Co.

Balling Machine.
Diamond Textile Machine Works.
Torrance Mfg. Co.

Bandings.
——See under Yarns.

Baskets.
Lane, W. T., & Bro.
Morris & Co.

Belting.
Gandy Belting Co.
Main Belting Co.
Norwich Belt Mfg. Co.
Shultz Belting Co.
Turner, J. S., Mfg. Co.
——See also Mill Supplies.

Belt Dressing.
Cling Surface Mfg. Co.
Dixon, Jas., Crucible Co.
Shultz Belting Co.
Stephenson Mfg. Co.

Belt Lacing Machines.
Birdsboro Steel Foundry & Machine Co.

Bindings.
——See Tapes and Braids.

Bleaching Kiers.
Allen, Wm., Sons Co.
Arlington Mch. Wks. (Arthur Birch, prop.)
Textile Finishing Machinery Co.

Bleaching Materials.
Bosson & Lane.
Roessler & Hasslacher Chemical Co.

Blowers.
Murphy, Harry F., & Co.

Blowers and Blower Systems.
American Blower Co.
Barney Ventilating Fan Works.
Boston Blower Co.
Green Fuel Economizer Co.
Mass. Fan Co.
New York Blower Co.
Philadelphia Drying Machinery Co.
Sterling Pipe & Blower Co.
Sturtevant, B. F., Co.
Schnitzler, Chas. H.

Bobbin Covers.
Kolb, Frank E.

Bobbin Machinery.
Defiance Machine Works.

Bobbins, Spools, Shuttles, Etc.
American Textile Specialty Mchy. Co.
Leigh, Evan A.
Tebbets, E. L., & Co.
Wilson & Co.

Boiler Inspection and Insurance.
——See Steam Boiler Insurance.

Boilers.
——See Steam Boilers.

Boxes, Cloth Boards, Etc.
Pearson, J. T.

Box Shook.
Connecticut Box Company.

Braiding Machinery.
New England Butt Co.
Textile Machine Works.

Braids.
——See Tapes, Braids and Edgings.

Bridges.
Scaife, W. B., & Sons.

Brushers.
——See Napping Machines.

Brushes.
Felton, S. A., & Son Co.
Mason Brush Works.
Parks & Woolson Machine Co.

Burr Pickers.
Curtis & Marble Machine Co.
Sargent's, C. G., Sons.
Smith & Furbush Machine Co.

Calico Printers' Machinery and Supplies.
Arlington Mch. Wks. (Arthur Birch, prop.)
Birch Bros., Somerville Machine Wks.
Butterworth, H. W., & Sons Co.
Rice, Barton & Fales Co.
Taunton, New Bedford, Copper Co.
Textile Finishing Mchry. Co.
——See also Dyeing, Bleaching, Machinery, etc.

Canvas Baskets.
Lane, W. T., & Bro.
Morris & Co.

Carbonising.
Riverdale Woolen Co.

Carbonising Machinery.
American Drying Machinery Co.
Birch Bros., Somerville Machine Wks.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Sargent's, C. G., Sons.

Card Clothing.
Ashworth Bros.
Bowes, L. M., Co.
Leigh, Evan A.
Riley, C. E., Company.
Stoddard, Haserick, Richards & Co.

Carded Cotton.
Blaisdell, S., Jr., Company.
Indian Orchard Company.
Wonalancet Company.

Card Feeds.
——See Automatic Feeds.

Card Grinding Machinery.
Entwistle, T. C., Co.
Leigh, Evan A.
Riley, C. E., Company.
Smith & Furbush Machine Co.
Stoddard, Haserick, Richards & Co.

Carders' Tools.
Brown, W. H.

Carpet Machinery.
Altemus, Jacob K.
Curtis & Marble Machine Co.
Parks & Woolson Machine Co.
Philadelphia Textile Machinery Co
Smith & Furbush Machine Co.

Case and Barrel Trucks.
Clark, The Geo. P., Co.

Castings.
Farrell Foundry and Machine Co.
Schofield, Wm., Co.

Cement Pans.
Scaife, W. B., & Sons.

Chain Blocks and Hoist.
Yale & Towne Mfg. Co.

Chemicals.
Roessler & Hasslacher Chemical Co.
Solvay Process Co.

Chemists.
Little, Arthur D.

Cling Surface.
Cling Surface Mfg. Co.

Clocks.
Pettes & Randall Co.

Cloth Boards.
Chaffee Bros.
Pearson, J. T.
Smyth, J. L. N., Paper Co.

Cloth Cutting Machinery.
——See Cutting Machinery.

Cloth Stretchers.
Arlington Mch. Wks. (Arthur Birch, prop.)
Leyland, Thomas, & Co.
Textile Finishing Machinery Co.

Clutches.
American Tool & Machine Co.
Humphrey Machine Co.
Hunter, James, Machine Co.

Color Kettles.
Rice, Barton & Fales Machine & Iron Company.

Comb Aprons.
Turner, J. S., Mfg. Co.

Comb Repairs.
Blackstone Valley Comb Works.

Combs (Wool and Cotton).
Hood, R. H.
Leigh, Evan A.
Lowe, Stephen C.
Philadelphia Textile Machinery Co.
Riley, C. E., Company.
Stoddard, Haserick, Richards & Co.

Concrete Work and Construction.
Simpson Bros. Corporation.

Consulting Electrical Engineer.
Puffer, William L.

Conveyors, Pneumatic.
——See Blowers & Blower Systems.

Cop Spindles.
American Textile Specialty Mchy. Co.

Cop Tubes.
American Textile Specialty Mchy. Co.
——See Paper Tubes.

Copper Print Rollers.
Rice, Barton & Fales Machine & Iron Company.
Taunton, New Bedford, Copper Co.

Coppersmiths.
Badger, E. B., & Sons Co.

Copper Work for Dyers.
Butterworth, H. W., & Sons Co.
Textile Finishing Machinery Co.

Corrugated Iron and Steel.
Scaife, W. B., & Sons.

Cotton.
Blaisdell, S., Jr., Co.
Charles, W. B.
Riley, C. E., Company.
Stoddard, Haserick, Richards Co.
Tolar & Hart.
Wonalancet Company.

Alphabetical Advertising Index, with page numbers, follows this list.

Cotton Machinery.
Altemus, Jacob K.
American Textile Appliances Co.
American Textile Specialty Mchy. Co.
American Drying Machinery Co.
Ashworth Bros.
Barker, James.
Butterworth, H. W., & Sons Co.
Crompton & Knowles Loom Works.
Crompton-Thayer Loom Co.
Curtis & Marble Machine Co.
Diamond Textile Machine Works.
Draper Company.
Easton-Burnham Co.
Elliott & Hall.
Entwistle, T. C., Co.
Firth, William, Co.
Hetherington, John, & Sons, Ltd.
Howard & Bullough American Mach. Co.
Kilburn, Lincoln & Co.
Kip-Armstrong Co.
Kitson Machine Co.
Leigh, Evan A.
Lowell Machine Shop.
Mason Machine Works.
Metallic Drawing Roll Co., The.
Parks & Woolson Machine Co.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Providence Machine Co.
Rice, Barton & Fales Co.
Riley, C. E., Company.
Saco & Pettee Machine Shops.
Schofield, Geo. L.
Smith & Furbush Machine Co.
Stafford, G. W., Mfg. Co.
Stoddard, Haserick, Richards & Co.
Textile Finishing Machinery Co.
Whitin Machine Works.
Woonsocket Machine & Press Co.

Cotton Openers and Lappers.
Howard & Bullough American Mach. Co.
Kitson Machine Co.
Leigh, Evan A.
Riley, C. E., Company.
Stoddard, Haserick, Richards & Co.

Cotton Softeners.
Bosson & Lane.

Cotton Waste.
Blaisdell, S., Jr., Co.
Charles, W. B.

Cranes.
Yale & Towne Mfg. Co.

Crayons.
Dixon, Jos., Crucible Co.
Lowell Crayon Co.

Cutter for Knit Goods.
Eastman Machine Co.
Langston, Samuel M.

Cutting Machinery.
Eastman Machine Co.

Dextrine.
Stein, Hirsh & Co.

Dobbies.
Crompton & Knowles Loom Works.
Crompton-Thayer Loom Co.
Stafford, G. W., Mfg. Co.

Drawing Rolls.
Hood, R. H.
Metallic Drawing Roll Co., The.

Dryers.
American Blower Co.
American Drying Machinery Co.
Arlington Mch. Wks. (Arthur Birch, prop.)
Birch, Arthur, Arlington Mch. Wks.
Birch Bros., Somerville Machine Wks.
Boston Blower Co.
Buffalo Forge Co.
Butterworth, H. W., & Sons Co.
Hunter, Jas., Machine Co.
Kenyon, D. R., & Son.
Mass. Fan Co.
Philadelphia Drying Machinery Co.
Sargent's, C. G., Sons.
Sturtevant, B. F., Co.
Textile Finishing Machinery Co.
Whiteley, William, & Sons, Ltd.
Vacuum Process Co.

Dry Goods Trucks.
Clark, The Geo. P., Co.

Drying Boards.
Bull, William C.
Pearson, J. T.

Dusters.
——See Wool and Waste Dusters.

Dust Collectors.
Allington & Curtis Mfg. Co.
Knickerbocker Co., The.
Philadelphia Drying Machinery Co.
Sterling Blower & Pipe Mfg. Co.

Dyers, Bleachers and Finishers.
Brophy's, T., Sons.
Davidson, J. F.
Fairhill Bleachery.
Fawell, Arthur.
Firth & Foster Co.
Greenwood, R., & Bault.
Home Bleach & Dye Works.
Ingrahamville Dye Works.
Lorimer's, The Wm. H. & Sons Co.
Pawtucket Dyeing & Bleaching Co.
Peerless Co.
Providence Mills Mfg. Co.
Rowland, Samuel.

Dyeing, Drying, Bleaching and Finishing Machinery.
Alton Machine Co.
Allen, William, Sons Co.
American Blower Co.
American Drying Machinery Co.
American Dyeing Machine Co.
Arlington Mch. Wks. (Arthur Birch, prop.)
Beaumont's Limited.
Birch, Arthur, Arlington Mch. Wks.
Birch Bros., Somerville Machine Wks.
Butterworth, H. W., & Sons Co.
Curtis & Marble Machine Co.
Entwistle, T. C., Co.
Gessner, David.
Heathcote, John, & Son.
Hopkins Machine Works.
Hunt, Rodney, Machine Company.
Hunter, James, Machine Co.
Kenyon, D. R., & Son.
Klauder-Weldon Dyeing Machine Co.
Klipstein, A., & Co.
Leigh, Evan A.
Leyland, Thos., & Co.
Parks & Woolson Machine Co.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Rice, Barton & Fales Co.
Schwartz, L. H. A., & Co.
Smith, Drum & Co.
Sirocco Engineering Co.
Sturtevant, B. F., Co. (Drying).
Textile Finishing Machinery Co.
Vacuum Process Co.
Whiteley, William, & Sons, Ltd.

Dye House Cans.
Hill, James, Mfg. Co.

Dye House Floors.
Simpson Bros. Corporation.

Dye House Trucks.
Clark, The Geo. P., Co.

Dye Sticks.
Bailey, Frank.
Haedrich, E. M.

Dye Tubs.
——See Tanks, Tubs and Vats.

Dyestuffs and Chemicals.
American Dyewood Co.
Attesaux, F. E., & Co.
Berlin Aniline Works.
Bischoff & Co.
Bosson & Lane.
Cassella Color Co.
Continental Color & Chemical Co.
Kalle & Co.
Ford, J. B., Co.
Fortner, L. B.
Geisenheimer & Co.
Johnson, Chas. A., & Co.
Klipstein, A., & Co.
Leyland, Thos., & Co.
Metz, H. A., & Co.
Roessler & Hasslacher Chemical Co.
Solvay Process Co.
Sykes, Walter F., & Co.
Thayer, Ed. M.
West Indies Chemical Works, Ltd.

Dynamos.
——See Electric Lighting.

Edgings.
——See Tapes, Braids and Edgings.

Electrical Construction.
Crocker-Wheeler Co.
General Electric Co.
Murphy, Harry F., & Co.
Sturtevant, B. F., Company.
Warner, Chas. E.
Westinghouse Electric & Mfg. Co.

Electrical Engineer (Consulting.)
Puffer, William L.

Electric Cloth Cutter.
Eastman Machine Co.

Electric Fans.
American Blower Co.
Crocker-Wheeler Co.
General Electric Co.
Mass. Fan Co.
Murphy, Harry F., & Co.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Sterling Blower & Pipe Mfg. Co.
Sturtevant, B. F., Co.
Warner, Chas. E.
Westinghouse Electric & Mfg. Co.
Wing, L. J., Mfg. Co.

Electric Hoists.
Yale & Towne Mfg. Co.

Electric Lamps.
Sturtevant, B. F., Company.

Electric Lighting.
General Electric Co.
Sturtevant, B. F., Company.
Warner, Chas. E.
Westinghouse Electric & Mfg. Co.

Electric Motors.
Crocker-Wheeler Co.
General Electric Co.
Sturtevant, B. F., Company.
Warner, Chas. E.
Westinghouse Electric & Mfg. Co.
Wing, L. J., Mfg. Co.

Elevators.
Morse, Williams & Co.
Salem Elevator Works.

Embroidery Machines for Hosiery and Knit Goods.
Walther, Otto.

Employees' Time Recorders.
Pettes & Randall Co.

Engine Stops.
Consolidated Engine Stop Co.

Engineers' Supplies.
Moulton, P. A.

Engravers.
Smith Bros.

Exhaust Heads.
Sterling Blower & Pipe Mfg. Co.
Sturtevant, B. F., Co.

Fans—Exhaust and Ventilating.
——See Ventilating Apparatus.

Feed Water Heaters.
Green Fuel Economizer Co.
Scaife, W. B., & Sons.

Feed Water Pumps.
Goulds Mfg. Co.
Scaife, W. B., & Sons.

Feed Water Purifiers.
Philadelphia Water Purification Co.
Scaife, W. B., & Sons.
The Hungerford Filter Corp.
United Water Improvement Co.

Feeds.
——See Automatic Feeds.

Felt Hardeners.
Farrell Foundry and Machine Co.

Felting Machinery.
Farrell Foundry and Machine Co.

Filters.
American Water Softener Co.
Norwood Engineering Co.
Phila. Water Purification Co., The.
Scaife, W. B., & Sons.
The Hungerford Filter Corp.
United Water Improvement Co.

Finishing Machinery.
——See Dyeing, Drying, Bleaching and Finishing.

Fire Brick.
Borgner, Cyrus, Co.

Fire Extinguishers.
Badger, E. B., & Sons Co.

Alphabetical Advertising Index, with page numbers, follows this list.

Induced Draft Apparatus Requires No Expensive Foundations

MECHANICAL DRAFT EQUIPMENT
BARTLETT ILLUMINATING CO., SAGINAW, MICH.

Just a place above the boilers and a short stack extending through the roof. It is effective in all kinds of weather. Doesn't fail just when it is wanted most, as is the case with the chimney. Catalogue No. 113 illustrates different installations.

B. F. Sturtevant Co., Boston, Mass.

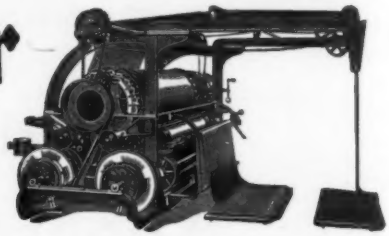
General Office and Works, Hyde Park, Mass.

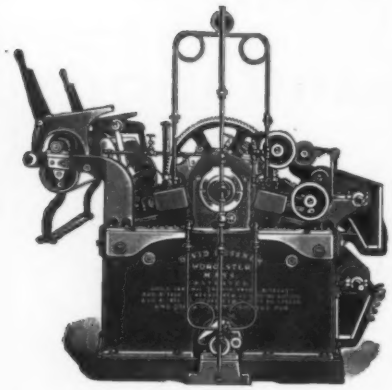
New York Philadelphia Chicago London

Designers and Builders of Heating, Ventilating, Drying and Mechanical Draft Apparatus; Fans, Blowers and Exhausters; Steam Engines, Electric Motors and Generating Sets; Fuel Economizers; Forges, Exhaust Heads, Steam Traps, Etc. 599

David Gessner

Worcester, Mass.

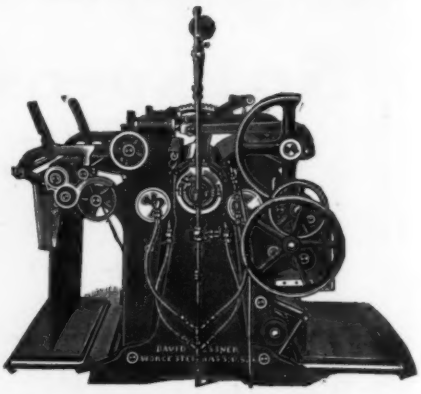




Latest Improved Cloth Finishing Machinery

—

Napping Machines and Presses a Specialty



Fire Hose.
Eureka Fire Hose Co.
Fire Hydrants.
Norwood Engineering Co.
Fire Insurance.
Home Insurance Co.
Fire Proof Doors and Windows.
Badger, E. B., & Sons Co.
Fire Pumps.
—See Pumps.
Flax, Tow, Hemp and Jute Machinery.
Fairbairn-Lawson-Combes-Barbour, Ltd.
Fluted Rolls.
Diamond Textile Machine Works.
Hood, R. H.
Leigh, Evan A.
Riley, C. E., Company.
Thurston, A. G., & Son.
Flyers.
Bodden, Wm., & Son, Ltd.
Hopkins Machine Works.
Leigh, Evan A.
Forges.
Buffalo Forge Co.
Sturtevant, B. F., Co.
Forwarders.
Salvator Transfer, Inc.
Friction Clutches.
National Brake & Clutch Co.
Friction Cones.
Evans, G. Frank.
Fuel Economizers.
Green Fuel Economizer Co.
Sturtevant, B. F., Co.
Fulling Mills for Woolen Goods.
Hunt, Rodney, Machine Co.
Hopkins Machine Works.
Hunter, Jas., Machine Co.
Kenyon, D. R., & Son.
Garnetts.
Leigh, Evan A.
Smith & Furbush Machine Co.
Gas Blowers and Exhausters.
Sturtevant, B. F., Co.
Gas Engines.
Jones, Lewis.
Gassing Machines.
Stubbs, Joseph.
Gauges.
Crosby Steam Gage & Valve Co.
Walworth Manufacturing Co.
Gears.
Farrell Foundry and Machine Co.
New Process Raw Hide Co.
Gear Cutting.
Farrell Foundry and Machine Co.
Gear Cutting Machine.
Whiton, The D. E., Co.
Generating Sets.
Crocker-Wheeler Co.
Sturtevant, B. F., Co.
Grate Bars.
Tupper, W. W., & Co.
Grease.
Cook's, Adam, Sons.
Grease Cups.
Cook's, Adam, Sons.
Gut Cords and Strings.
Wentworth, M. W.
Heating.
—See Ventilating.
Heddles.
Steel Heddle Mfg. Co.
Stoddard, Haserick, Richards & Co.
Hoisting Apparatus.
Economy Engineering Co.
Larrabee, Jno. E.
Yale & Towne Mfg. Co.
Hosiery Boards.
Pearson, J. T.
Hosiery Labels.
Beck, Charles, Paper Co.
Kaumagraph Company.
Humidifying Apparatus.
American Moistening Co.
Bell Pure Air & Cooling Co.
Hydraulic Rams.
Power Specialty Co.
Hydro Extractors.
American Tool & Machine Co.
Broadbent, Thomas, & Sons.
Hunt, Rodney, Machine Company.
Riley, C. E., Company.
Stoddard, Haserick, Richards & Co.
Textile Finishing Machinery Co.
Whiteley, William, & Sons, Ltd.
Illuminating Engineer.
Puffer, William L.
Insulating and Braiding Silks.
Sauquoit Silk Mfg. Co.
Insurance (Casualty, Fire and for Loss of Profits.)
Home Insurance Co.
Maryland Casualty Co.
Ironing Machines for Knit Goods.
Craw, J. W., Laundry Machinery Co.
Jacquards.
Halton's Thomas, Sons.
Knit Goods, Edgings, Trimmings, Etc.
Chapin, Geo. W.
Charles, W. B.
Cheney Bros.
Friedberger-Aaron Mfg. Co.
Krout & Fite Mfg. Co.
Weimar Bros.
Knit Goods, Finishing Machines, Crochet, Etc.
Craw, J. W., Laundry Machinery Co.
Eastman Machine Co.
Hunt, Rodney, Machine Company.
Langston, Samuel M.
Merrow Machine Co., The.
Nye & Tredick Co.
Scott & Williams.
Union Special Machine Co.
Willcox & Gibbs Sewing Machine Co.
Knitting Machine Cylinders.
Paxton & O'Neill.
Stafford & Holt.

Alphabetical Advertising Index, with page numbers, follows this list.

CROMPTON-THAYER LOOM COMPANY

—— MANUFACTURERS OF ——

Fancy Looms

For Weaving Worsted and Woolen, Fancy Cottons and Silk Fabrics.

DOBBIES, BOX MOTIONS and SUPPLIES.

WORKS AND OFFICES:

677 Cambridge Street, - Worcester, Mass.

ALEXANDER & GARSED, Southern Agents, Charlotte, N. C.

Knitting Machinery.
Boss Knitting Machine Co.
Brinton, H., & Co.
Claes & Flentje.
Cooper, Chas.
Crane Mfg. Co.
Excelsior Knitting Machine Mfg. Co.
Gormly, Robt. W., & Co.
Grosser Knitting Machine Co.
Hemphill Mfg. Co.
Jenckes, E., Mfg. Co.
Jones, Lewis.
Kinsey, Walter.
Koch, Edward W.
Lamb Knitting Mach. Mfg. Co.
Leighton Machine Co.
Mayo, Geo. D., Knitting Machine Co.
Mayo Knitting Machine & Needle Co.
National Automatic Knitter Co.
Nye & Tredick Co.
Paxton & O'Neill.
Scott & Williams.
Stafford & Holt.
Standard Machine Co.
Taylor, James.
Tompkins Bros.
Walter & Co.
Walther, Otto.
Wildman Mfg. Co.

Knitting Needles and Supplies.
Breedon's, Wm., Son.
Brinton, H., & Co.
Continental Latch Needle Company.
Cooper, Chas.
Corey, Wm., Co.
Crane Mfg. Co.
Dodge Needle Co.
Excelsior Needle Co.
Grosser Knitting Machine Co.
Ives, Loyal T.
Jarrard Needle Company.
Kolb, Frank E.
Lamb Knitting Machine Mfg. Co.
Manufacturers' Supplies Co.
Mayo Knitting Machine & Needle Co.
Page Needle Co.
Treat, Orion.
Wardwell Needle Co.

Labeling Machines.
Beck, Chas., Paper Co., Ltd.

Lamps, Incandescent.
General Electric Co.
Westinghouse Electric & Mfg. Co.

Lawyers (Mercantile.)
Yeomans & Ironside.

Leather.
Bowes, L. M., Co.

Loom Clutches.
Natl. Brake & Clutch Co.

Loom Pickers.
Garland Mfg. Co.

Loom Repairs and Parts.
Glaser Mfg. Co.

Looms.
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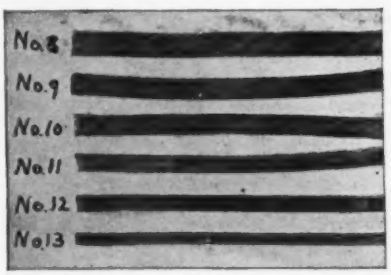

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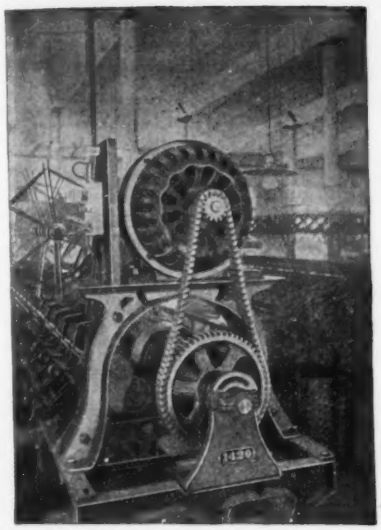

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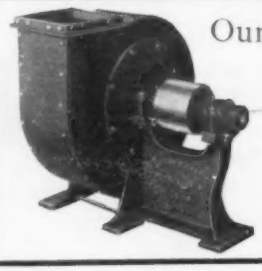

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Direct Current, 110, 220, 500 Volts,—Alt. Current, 1, 2, 3 Phase, 25, 60, 125 Cycle.

30 H. P. 2 Phase, 200 Volt, 60 Cycle Motor-Westinghouse.
100 H. P. 3 Phase, 550 Volt, 60 Cycle Motor, Gen. Electric.
200 H. P 2 Phase, 440 Volt, 25 Cycle Motor, Westinghouse.
125 K. W. 2 Phase, 1100 Volt, 60 Cycle Generator direct connected to 13 and 22 x 14 Erie Ball—Vertical Engine.
100 K. W. 125 Volt, 6 Pole Generator, Westinghouse.
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500 K. W. 500 Volt, 10 Pole, Gen. Elec. Generator direct connected to 20 and 38 x 48 Cross Compound Allis Engine.
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35 H. P. 500 Volt, 4 Pole, General Electric Motor.
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2-15 and 23 x 17 McIntosh & Seymour Tand. Comp. Engines.
30 and 40 x 72 Tandem Compound. Allis-Corliss Engine. 32 foot wheel. Weight of wheel 85 tons. A bargain.

JUST A FEW OUT OF MANY.

STEAM ENGINES—CORLISS AND HIGH SPEED—ALL SIZES AND MAKES.

CHAS. E. WARNER, 60 State St., Boston, Engineer and Broker.

Silk Mill Manager.

With wide and first class experience desires to make new connections. Can take entire charge of large mill and also understands thoroughly all the branches of the trade, throwing, finishing, etc., etc. Familiar with best methods of mill accounting, costing of goods, and analyzing the work and expenses of the different departments. Unexceptionable references. Inquiries will be regarded as strictly confidential. Address "Manufacturer," care Textile World Record, Boston, Mass.

C. WOLFENDEN,

2316 North 2d St., Philadelphia, Pa.

Dealer and Jobber in

Textile Machinery, New and Second Hand

Will buy Odd Lots of Yarn of Any Kind.
Send Samples and Price.

FOR SALE :—12 Knowles Looms 4x4 Box Stafford Tops, 20 harness. Nearly new.

Rooms with Power for Rent.

About 30,000 sq. ft. floor space, with power to suit. Has always been used, and is especially adapted for textile purposes.

B. S. ROY & SON, Worcester, Mass.

For Sale.

High Grade Underwear Factory located in the Middle West. Labor conditions first class. For full particulars address "R," care Textile World Record, Boston, Mass.

A Splendid Mill to Rent.

This mill is ninety by fifty feet and five stories high, brick lined and equipped with Grinnell Sprinklers. Connected with the mill is a brick lined Boiler House with New 80 H. P. Boiler, a Picker House, Dye House and Dry House.

The Mill is run by water but has a new 35 H. P. Engine to use if necessary and is wired throughout for Electricity and for an Eco Magneto Watch Clock.

Apply to Cole Mfg. Co., Lakeport, N. H.

Cotton COMBER repairs

Re-needling or building for English or Alsatian strips or **Half Laps.**

Write for prices.

Blackstone Valley Comb Works, Lonsdale, R. I.

For Sale.

The Tiffin (Ohio) Woolen Mills fully equipped as a Blanket Mill, will sell as a whole or land and building and machinery separately. Address "Blanket Mill" care Textile World Record, Boston, Nass.

W. F. Suttill, Lille, France, Import House for Textile Apparatus. Sole Agent for France and Belgium, since 1886, of leading British Cotton Machinists. Expert in Ring Spinning and Doubling, desires to introduce approved American Novelties. Highest references given and required.

FOR SALE BARGAIN.

On account of poor health we are going to retire from manufacture of Hosiery and will sacrifice the following machines:

20 National Automatic Lace all around, 216 needle size 3¾	$3500
24 McMichael & Wildman Ribbers with stop motions 5 in.	1500
3 McMichael & Wildman Ribbers with stop motions 4½ in.	
2 Champion Overlock Welters	125

These machines are all in first class running order and almost new The Nationals have not been run a year and the others only a little over a year.

CARVIN KNITTING CO.,
Jasper and Orleans Sts., PHILADELPHIA, PA.

WANTED.

The Selling Agency

for Chicago and the West, of an up-to-date manufacturer of dress-goods by a **CHICAGO DRY GOODS COMMISSION HOUSE** of 20 years' standing. Address, "Commission," care Textile World Record, Boston, Mass.

Agent or Manager of Cotton, Woolen or Worsted Mill.

Experienced manager desires to make a change. Thoroughly up-to-date in best methods of following work and costs through the mill and getting a large and perfect output at minimum of cost. Competent to take full charge of first class mills. Best references. Answers confidential. Address, "Agent," care Textile World Record, Boston, Mass.

Wanted.

First class man to manage office and sales department of Underwear Mills making high grade goods and selling direct to consumer. Will pay salary or sell part interest. For full information address "J," care Textile World Record, Boston, Mass.

Weaver Wanted,

a skillful, sober, steady weaver with loom for Elastic Hosiery. Permanent position assured. Address with references, WOODARD, CLARKE & CO., Portland, Oregon.

Free Scholarships

In I. C. S. courses of instruction for Textile Mill men.

The International Correspondence Schools have decided to allot a limited number of free scholarships to men actively engaged in cotton, woolen, worsted or silk mills in any department. These scholarships may be selected from any one of the two hundred courses of instruction taught by the Schools; some are valued as high as $100.00, and nearly all include a free reference library. They may be held and studied by the parties to whom they are awarded or given to a member of his family or a deserving employe in a textile mill. For full particulars address, giving your name, occupation, house address, business address, city and state.

C. P. BROOKS, Principal,
Textile Department,
International Correspondence Schools
Box 836 New Bedford, Mass.

A prompt application is desirable.

Weavers Wanted

For Knowles and Crompton-Thayer Looms on Cassimeres and Thibets at the Meriden Woolen Co., Meriden, Conn.

BOSS KNITTER

open for position on latch needle Men's Ladies' or Children's ribbed underwear. Any class of goods. All makes of machines. Best of references. Address "Class" care Textile World Record, Boston, Mass.

SPECIAL NOTICE.

Wanted for cash accompanying order, a line of highest grade domestic fancy half hose to be jobbed on the Pacific Coast, sample with price shall receive prompt attention, address, "Grade," care Textile World Record, Boston, Mass.

Wanted a Sewing Machine Fix r.

Apply to The William Carter Company, Highlandville, Mass., Underwear Manufacturers.

Roller Coverer. Position wanted by a thoroughly experienced man who has been 30 years in the business and is second to none. Location near home preferred. Address Alphonse Patnande, 84 Slater St., North Webster, Mass.

Overseer of Finishing Wanted that can repair sewing machines, handle help and get out the production. References as to ability required. For such a man we are willing to pay good wages. "M. V.," care Textile World Record, Boston, Mass.

Wanted Overseer for Cotton Plant, familiar with carding, drawing, slubbing and fly frames, for a night run Apply Joseph Simpson Sons, Toronto, Canada.

SITUATIONS WANTED.

The following advertisements are a portion of those of superintendents and overseers, of whom full particulars are on file at this office. Manufacturers who may be in need of such men may address them in care of Textile World Record, or state their requirements directly, and the addresses of suitable men will be furnished without charge.

Mr. C. T. Donlevy, a practical mill overseer and superintendent, who has a wide acquaintance with mill men, is now a member of the Textile World Record staff, and gives special attention to this department. He would be pleased to hear from any of his friends who may be interested.

WOOLEN SUPERINTENDENTS.

Manager, Agent, Supt. or Supt. and Designer. Position wanted by a man 57 years of age, English, married, has worked on all classes of woolen and worsted goods, in fancy and piece dyes, from the finest to the coarsest goods. Familiar with all kinds of machinery, has exceptionally good reference, could take a position at once. 3705, Textile World Record.

Superintendent or assistant superintendent in a woolen mill. Position wanted by a man, 30 years of age, American, married. Familiar with all kinds of woolen and worsted goods, also yarn production from fine to low grades. Also familiar with French system of worsted yarn manufacturing. Good reference. 3795, Textile World Record, Boston, Mass.

Superintendent of Woolen Mill. American, 35 years of age, with experience on cotton worsteds, piece dyes, unions, thibets, all wool goods and satinets. Understands nearly all machinery used in this work. Is dyer and finisher on above goods and would accept such a position. Wants position in the East. 3403, Textile World Record, Boston.

Assistant Superintendent. American, 28 years of age, with experience as manager, understands buying and selling, and overseeing any part of carpet yarn mill, wants a position in the South. A1 references. 3372, Textile World Record, Boston.

Superintendent and Designer or Agent. American, 41 years of age, has worked in nearly every department of a woolen mill and thoroughly understands his business. On all classes of wool and worsteds, dress goods, broadcloths, overcoatings, rain cloths, meltons, army goods, etc., and on all the best makes of machinery. Wants position in the States. 3416, Textile World Record, Boston.

Superintendent of Woolen Mill. American, 36 years of age, with experience as superintendent and manager 10 years. Accustomed to unions, satinets, beavers, cloakings, dress goods, etc., and the machinery used in this work. A1 references. 3410, Textile World Record, Boston.

Supt. or Asst. Supt. Position wanted by a man 45 years of age, married and American. Has worked on cassimeres, wool and cotton worsteds, kerseys, cloakings, meltons and cheviots. Is familiar with all kinds of woolen machinery. Good references. 3523, Textile World Record.

Superintendent or Boss Weaver in a woolen mill. Worked on all kinds of woolen and worsted goods; familiar with all kinds of woolen machinery; 43 years of age; married; English. 3292, Textile World Record, Boston, Mass.

Agent, Superintendent or Designeer in a woolen mill. Could accept a position in four weeks' notice. Familiar with all kinds of woolen goods, including cheviots, cassimeres, flannels, blankets and mackinaws. 28 years of age; American; first-class references from mills where he has been employed. 3280, Textile World Record.

Assistant Superintendent and Designer. Position wanted by a man 32 years of age, married. Is experienced on men's wear, dress goods, cotton worsteds, woolens, linen towels, madras, flannels, etc. Is familiar with Knowles, Crompton, Clipper, Bridesburg dobby cam looms, dressing, spooling, twisting and warping frames. Good references. 3665, Textile World Record, Boston, Mass.

Superintendent and Designer in a woolen mill. Position wanted by a man, 33 years of age, American, married. Has worked on broad cloths, plaidbacks, fancy dress goods, union cassimeres, satinets, thibets and shirtings. Familiar with all kinds of machinery. First class recommendations. 3745, Textile World Record, Boston, Mass.

Superintendent and Designer in a woolen mill. Position wanted by a man, 30 years of age, single, Scotch. Has worked on all kinds of men's wear, wool and worsted, plain and fancy, also dress goods. Familiar with all kinds of machinery. Will go any place for a good position. First class references. 3749, Textile World Record, Boston, Mass.

WOOLEN SUPERINTENDENTS.

Superintendent of a Woolen Mill. Position wanted by a man 40 years of age, American, married. Worked on kerseys, thibets, meltons, cheviots, cassimeres and government goods. Familiar with all kinds of stock. First-class reference. 3771, Textile World Record, Boston.

Asst. Supt, or Overseer of Dressing. Position wanted by a man 30 years of age, married and American. Has worked on fancy cotton, woolens and worsteds, and all kinds of high and low grade goods. Is familiar with all kinds of woolen and cotton machinery. Good references. 3537, Textile World Record.

Superintendent or Designer. Position wanted by a man 50 years of age, married, American. Has manufactured all kinds of woolen and worsted goods, cotton worsteds, wool, cotton and shoddy mixes. Is familiar with all kinds of machinery. Good references. 3670, Textile World Record, Boston, Mass.

Superintendent of a Woolen Mill. Position wanted by an American. Has had experience on satinets, unions, cassimeres, worsted goods, etc. Is familiar with all kinds of woolen machinery. First-class references. 1537, Textile World Record, Boston, Mass.

Superintendent of a Small Worsted Plant, or Overseer of Drawing, Spinning and Twisting. Position wanted by a man 38 years of age, married, English. Has worked on botany or any kind of weaving yarns, also fancy novelties. Is familiar with all kinds of English and American worsted machinery. Good references. 3689, Textile World Record, Boston, Mass.

Superintendent of a small woolen mill or assistant superintendent and designer in a large mill. Position wanted by a man, 32 years of age, married, English-Canadian. Worked on men's wear, dress goods, flannels, blankets and fancy cassimeres. Familiar with all kinds of modern machinery. Good reference. 3802, Textile World Record, Boston, Mass.

Superintendent or Assistant Superintendent in a large woolen mill. Position wanted by a man 52 years of age, married, English. Has worked on unions, satinets, cheviots, thibets, cloakings, overcoatings, dress goods, beavers and all kinds of woolen goods. Familiar with all kinds of woolen machinery. Good reference. 3776, Textile World Record, Boston.

Superintendent or Overseer of Spinning, Twisting, Reeling in a worsted mill or carpet mill. Position wanted by a man 40 years of age, married, English. Has worked on knitting worsteds, Scotch fringerings, carpet worsteds, long wool, serge yarn on tube or bobbin, cap or fly frames. Familiar with the Prince, Smith spinning and twisting machines, Hall & Steele twisting machines. Good reference. 3783, Textile World Record, Boston.

Supt. in Small Mill, or Asst. Supt. and Designer. Position wanted by a man 31 years of age. Graduate of English Textile School, and is experienced on fine fancy worsteds, worsted cheviots, piece dyes for men's wear, having been designer on these goods for past 8 years. Good references. 3545 Textile World Record.

Assistant Superintendent. Worked on woolens and worsteds of all kinds. Graduate of a Textile School, American; 23 years of age; single. 3228, Textile World Record.

Superintendent or Manager. Over 35 years' mill experience; last 20 years as superintendent; active, energetic, competent and excellent manager of help. Understands all raw materials, wool, cotton, shoddy and their values. Also understands carbonizing. Could take a position at short notice. 3279, Textile World Record.

Woolen Superintendent and designer. Worked on men's wear, worsteds, fancy cassimeres, smoking jackets, over-cloth, ladies' dress goods. 28 years of age; English; single. 3234 Textile World Record.

COTTON SUPERINTENDENTS.

Asst. Supt. or Overseer of Spinning. Position wanted by a man 35 years of age, married, American. Has worked on wool, cotton and wool and shoddy mixes. Is familiar with all kinds of spinning machinery. Good references. 3104, Textile World Record, Boston, Mass.

Superintendent of a Cotton or Woolen Yarn Mill. Position wanted by a man 48 years of age, married, English. Is experienced on hosiery yarns, both cotton and woolen system, yarns for dress goods and unions. Is familiar with all kinds of American and English cotton and woolen machinery. Good references. 3656, Textile World Record, Boston, Mass.

Supt., Asst. Supt., or Overseer of Carding. Position wanted by a man 39 years of age, married, American. Is experienced on all kinds of cotton colored goods, long or short stock, also on bleached stock. Is familiar with Colvin, Whitin and Crompton looms, and all makes of carding and spinning machinery. Good references. 3585, Textile World Record.

Cotton Superintendent wants position. Now engaged, but wishes to change to better condition. Worked on all kinds of plain cotton goods, prints, sheetings, ginghams, etc. Familiar with all kinds of cotton machinery. Will not go West, South or Canada. Age 43, married, first-class references. 2005, Textile World Record.

Superintendent or boss carder of carding and spinning in cotton mill. Familiar with all kinds of cotton yarns, including high and low stock; familiar with combs; first-class references; 36 years of age; married. 3290, Textile World Record, Boston, Mass.

Superintendent Cotton Mill or overseer of carding in large mill. 35 years of age; married; American. Worked on coarse and fine fancy cloths. Carded combed staple cotton for weaving as fine as 135s. Carded solid colors and mixes for hosiery yarns to 80s. Good references. 3447, Textile World Record, Boston.

Superintendent, Assistant Superintendent and Designer, or overseer of weaving and finishing. Position wanted by a man 33 years of age, American. Is experienced on ginghams, madras, shirtings, linings, lawns, silks and ducks. Is familiar with all kinds of cotton machinery. Good references. 3616, Textile World Record, Boston, Mass.

Superintendent of Bleachery. Worked on all kinds of lawns, lenos and colored lawns, towels, colored and white ducks, drills, tickings, shirtings and hosiery. Familiar with all kinds of bleaching machinery; first-class references; 55 years of age. 3245, Textile World Record.

Superintendent of bleaching. Worked on all kinds of lawns, lenos and colored lenos, towels, colored and white, ducks, drills, sateens, tickings. Age 55; English; married. First-class references. 3245, Textile World Record.

Superintendent of bleaching and finishing cotton goods. Worked on all kinds of cheese cloth, buttercloth, sheetings, quilts, cambrics, long cloth, ducks and drills. Age 31; English; married. 3218, Textile World Record, Boston, Mass.

Supt. or Asst. Supt. Position wanted by a man 38 years of age, married. Has worked on fancy cotton goods, lenos, broad silks, ribbons, hat-bands, cotton-back satins, pongees, etc. Is familiar with all looms, and all machines used in silk mills. Good references. 3560, Textile World Record.

Agent or Superintendent of a cotton mill. Position wanted by a man, 40 years of age, American, married. Familiar with fancy, colored and plain goods of all kinds. Familiar with all kinds of cotton machinery. Has been overseer for a number of years in first class mill. Could take a position at short notice. Good reference. 3814, Textile World Record, Boston, Mass.

Assistant Manager or superintendent, office position or designer on elastic and non-elastic webbing. Position wanted by a man, 24 years of age, American, single. Is a graduate of the Lowell Textile School, three years' course. Has had 1 1/2 years' practical experience as designer on the above goods and school training on woolen, worsted and cotton fabrics. Familiar with Crompton & Knowles, Whitin and Draper looms, also Jacquards. Good reference. 3790, Textile World Record, Boston, Mass.

COTTON SUPERINTENDENTS.

Superintendent and Designer, or Designer. Young man, American, with 4 years' experience as designer. Worked on shirtings and all kinds of elastic and non-elastic webs, on Crompton and Knowles, broad and narrow looms. Will accept a good position anywhere in United States. 3359, Textile World Record, Boston.

Superintendent and Designer. Position wanted by a man 30 years of age, English. Has worked on all kinds of fancy cotton goods, and is familiar with all kinds of cotton looms. Good references. 3682, Textile World Record, Boston, Mass.

Superintendent or assistant superintendent of a cotton mill. Position wanted by a man 29 years of age; married. Is experienced on sheetings, shirtings, ginghams, flannelettes, domets and fancy hosiery yarns. Is expert on colored work. Is familiar with all kinds of American and English carding and spinning machinery. First-class references. 1718, Textile World Record, Boston, Mass.

Cotton Superintendent. Worked on dress goods, shirtings, skirtings, ginghams, cotton flannels and blankets. Familiar with all kinds of cotton machinery. Age 37, married; first-class references. 1432, Textile World Record.

Superintendent of cotton mill, spinning or weaving, assistant superintendent or designer or overseer of weaving, plain or fancy goods. Age 28; English; married; first-class references. 3243, Textile World Record.

Superintendent, assistant or boss weaver and designer. Position wanted by a man, 35 years of age, English, married. Familiar with lappett and dobby work, lenos, silk handkerchiefs and all kinds of cotton goods made on dobby and box motion looms. Good reference. 3793, Textile World Record, Boston, Mass.

Superintendent or overseer of carding in a large mill. Worked on sheetings, ginghams. Will not go West. Familiar with all kinds of cotton machinery. 41 years of age; American; first-class references. 2021, Textile World Record.

Cotton Superintendent or overseer of carding. Worked on all white goods yarns from 12s to 150s. Familiar with the Lowell, Saco & Pettee revolving flat cards. Age 37; married; first-class references. 1898, Textile World Record.

Superintendent Small Yarn Mill. American, 25 years of age; worked on carded yarns, 8s to 60s, American cotton, white goods only. Also on all makes American machinery. Would accept position as carder, weaver or designer, where there was a chance for advancement. 3392, Textile World Record, Boston.

Superintendent or Agent of Cotton Mill. Position wanted by a man 43 years of age, married, American. Has worked on all kinds of cotton and worsted goods, and is familiar with Draper, Crompton & Knowles, Lowell, Whitin, Mason, Kilbourn and Lincoln looms. Good references. 3669, Textile World Record, Boston, Mass.

Superintendent of Bleach or Dye Works, or would consider overseer in any department. Worked on sheetings, shirtings, cambrics, lawns, quilts, prints and linens. No knowledge of yarns. 38 years of age. Scotch; married. 1620, Textile World Record.

Superintendent of a Bleachery or Dye Works or overseer of mercerizing. Worked on all kinds of goods, including bed spreads, towels, ducks, sheetings, drills, cambrics, cotton flannel, bags, shoe lining and window shades. 42 years of age; married; English. 3274, Textile World Record, Boston, Mass.

Assistant Superintendent or in the selling office. Familiar with broad silks of all kinds, ribbons and velvets; also cotton, flax, jute and hemp. Artificial silks, also all kinds of textile fabrics and yarns. First-class recommendations. 1994 Textile World Record, Boston, Mass.

Superintendent. Would like position in South. Not particular about salary to start. Machinist and thoroughly acquainted with all kinds of card room machinery, also spinning frames. Taken superintendent course in textile school and has had 23 years of practical experience in the mill, mostly on fine yarn work. 3044, Textile World Record.

DESIGNERS.

Designer, assistant designer or assistant superintendent. German. Woolen and worsted men's wear and ladies' dress goods. Experienced in Germany and a short time in this country. 3166, Textile World Record.

Designer or superintendent. Ginghams, crepe, jacquards, cycle tires, filter cloth, vesting cloth, etc. Good recommendations. Middle aged man; English; married. 3169, Textile World Record.

Designer. Plain satin, fancy leno, checks, colored and dainties in cotton. Wants $3.50 or over a day. 3043, Textile World Record.

Designer, assistant superintendent or boss weaver. Familiar with all kinds of worsted dress goods, fancy cotton waistings, corduroys, worsted suitings and cassimeres. Familiar with all kinds of dressing and winding. English and Crompton & Knowles looms. 32 years old; English; first-class references. 3080, Textile World Record.

Assistant Designer. American, with experience on men's wear, dress goods, mercerized, rain cloth, uniform cloth, woolens and worsteds. 22 years of age. Wants a position in the States where he can find advancement. 3424, Textile World Record.

Designer or assistant superintendent. Worked on cotton warp flannel coverts, plain and fancy cotton warp, and all wool dress goods. First-class references. 3244, Textile World Record.

Designer or Assistant Superintendent. 40 years of age, married, with experience in best mills in New England. Worked on all kinds of dress goods, from the finest to the heaviest. Understands web drawing and twisting, hand dressing and short chain beaming. 3363, Textile World Record.

Asst. Designer or Boss Weaver. Position wanted by a man 26 years of age, single, worked on fancy worsteds, woolen suitings, piece dyes and dress goods. Good references. 3567, Textile World Record.

Designer on cotton, or assistant on woolen, worsted or Jacquard work. Age 31; American; unmarried. 3190, Textile World Record.

Designer on any class of dress goods waistings, mantle cloths, fine shirtings, etc. 3203, Textile World Record.

Designer on Webbing, or Asst. Supt. in a cloth mill. Position wanted by a man 23 years of age, American. Is experienced on worsted and cotton goods, but mostly in the webbing business. Is a graduate of the Lowell Textile School and is familiar with Crompton & Knowles looms. Good references. 3578, Textile World Record.

Designer or Asst. Supt. Position wanted by a man 34 years of age. Has worked on fancy worsteds, cheviots, overcoatings, and cotton worsteds. Is familiar with Crompton & Knowles looms. Good references. 3518, Textile World Record.

Designer. Position wanted by an American, 28 years of age and married. Worked on checks, plaids, madrases, cheviots, woolen and worsted suitings, fancy ginghams, gauzes, lenos, spot effects and novelties, etc. Is familiar with Crompton & Knowles plain and dobby looms, Mason plain and dobby looms and Kilburn & Lincoln plain looms. Good references. 3482, Textile World Record, Boston.

Designer and Assistant Superintendent. Position wanted by a man 31 years of age, married, Scotch. Is experienced on cassimeres, cheviots, coverts, outing rain coatings, piece dyes and has had some experience on worsteds. Is familiar with Crompton & Knowles looms. Good references. 3625, Textile World Record, Boston, Mass.

Designer. Worked on ladies' dress goods, shirtings and flannels and some jacquard designing; first-class recommendations; 33 years of age; married. 3285, Textile World Record.

Designer or superintendent. Age 37; English; married. Experienced in this country and England. Worked on cloakings, suitings, coverts, broadcloths, etc. Wants $30 to $40 per week. Mill closed, and wants place at once. Good references. 3140, Textile World Record.

Assistant Designer. Position wanted by a man 21 years of age, American. Is a graduate of the Lowell Textile School, and has worked on all kinds of cotton goods, woolen and worsted dress goods and men's wear. First-class references. 3649, Textile World Record, Boston, Mass.

DESIGNERS.

Designer or assistant designer in a worsted mill. Position wanted by a man, 25 years of age, single, American. Worked on worsted piece dyes, fancy and cotton worsteds. Familiar with Crompton & Knowles looms. Good reference. 3801, Textile World Record, Boston, Mass.

Designer or assistant designer in a large mill. Position wanted by a man, 24 years of age, single, American. Worked on all kinds of woolen goods, worsteds and cotton worsteds. Good reference. 3796, Textile World Record, Boston, Mass.

Designer. Position wanted by a man 34 years of age, married, American. Is experienced on dress and tie silks, cotton and silk goods, novelty fabrics and ribbons, woolen and worsted Jacquard work. Is familiar with Crompton & Knowles, Stafford, Schaum & Uhlinges Jacquards. First-class recommendations. 3635, Textile World Record, Boston, Mass.

Designer and Assistant Superintendent. Position wanted by a man 32 years of age, married, Scotch. Is experienced on all grades of woolens and worsteds, both men's and ladies' wear, cheviots, and homespuns a specialty. Is familiar with Crompton & Knowles looms. Good references. 3666, Textile World Record, Boston, Mass.

Designer and Assistant Superintendent. Position wanted by a man 43 years of age, married, English. Is experienced on all classes of goods from fine worsteds to the lowest woolens for men's wear. Fancy and plain cloakings and dress goods, linings, mercerized goods, unions. Is familiar with Crompton & Knowles looms and Johnson & Bassett and Davis & Furber mules. Good references. 3655, Textile World Record, Boston, Mass.

Assistant Superintendent and Assistant Designer. Position wanted by a man 27 years of age, German. Has worked on fancy cassimeres, overcoatings and dress goods. Is familiar with Crompton & Knowles looms. Good references. 3681, Textile World Record, Boston, Mass.

Assistant Superintendent or second hand in a large dye house. Position wanted by a man, 27 years of age, single, American. Worked on cheviots, cassimeres, flannels, covert cloth, overcoatings, some cotton and fancy worsteds. Familiar with all kinds of machinery used in a textile mill. Good recommendations. 3743, Textile World Record, Boston, Mass.

Superintendent or Designer in a small woolen mill, or assistant superintendent or designer in a large mill or bookkeeper. Position wanted by a man, 46 years of age, married, Scotch. Worked on men's wear, ladies' dress goods and cloakings. Has worked in all departments in a woolen mill, has taken a course in designing and is familiar with Crompton & Knowles looms and Davis & Furber mules. Will not go West, South or Canada. Good references. 3750, Textile World Record, Boston, Mass.

Superintendent, assistant superintendent or assistant designer. Position wanted by a man 28 years of age, married, and American. Is experienced on all classes of woolen goods, and is familiar with Crompton & Knowles looms. Good references. 3591, Textile World Record, Boston, Mass.

Superintendent or Assistant Superintendent and Designer. Position wanted by a man 34 years of age, married, English. Is experienced on worsted coatings, woolen cassimeres, amazons, venetians, dress goods, kerseys and beavers. Is familiar with all kinds of woolen machinery. Good references. 3629, Textile World Record, Boston, Mass.

Superintendent or Designer. Position wanted by a man 34 years of age, experienced on worsted suitings, dress goods, cotton worsteds, cassimeres, overcoatings and coverts. Practical in all departments of woolen mills. First-class references. 3076, Textile World Record, Boston, Mass.

Superintendent and Designer wants position as manager. Experienced designer and practical man for the tie-up of looms for weaving ribbons, silk, upholstery and cotton goods, plain and jacquard cloths. 20 years' experience as manager and understands a mill in all its branches. Knows the coloring for stripes and figured upholstery, cotton, silk and ribbon novelties a special. 3423, Textile World Record, Boston.

WOOLEN CARDERS.

Overseer of Woolen Carding or second hand in a good mill. Position wanted by a man, 55 years of age, married, with 27 years' experience as overseer of carding on all kinds of cotton, shoddy and mixed goods. Familiar with all kinds of carding machinery. 3754, Textile World Record, Boston.

Overseer of Carding in a knitting or hosiery mill. Position wanted by a man, 34 years of age, American, married. Has had seventeen years' experience in knitting mills in the carding department; familiar with all kinds of stock, including cotton waste; familiar with all kinds of carding and garnett machines. First-class reference. 3765, Textile World Record, Boston.

Overseer of Woolen Carding. Position wanted by a man, 39 years of age, married, American. Has worked on wool, shoddy and cotton mixed goods, dress goods, kerseys, overcoatings, cassimeres, etc. Familiar with D. & F. carding machinery. Good reference. 1766, Textile World Record, Boston.

Overseer of Woolen Carding. Position wanted by a man, 33 years of age, married, American. Worked on all kinds of cotton, shoddy and wool mixed goods. Familiar with all kinds of woolen carding machinery. Will not go west, south or Canada. Could take a position at short notice. Good reference. 3774, Textile World Record, Boston.

Overseer of Carding. American, 40 years of age, with 8 years' experience as overseer, accustomed to all grades of woolen and cotton and shoddy mixes, and to all kinds of woolen carding machinery, wants position in the North. 3358, Textile World Record.

Overseer of Woolen Carding. Position wanted by a man, 35 years of age, married, American. Worked on cotton, wool and shoddy mixes and is familiar with very low stock, all kinds of woolen cards, Barker condensers. Good reference. 3800, Textile World Record, Boston, Mass.

Overseer of Woolen Carding. Position wanted by a man, 47 years of age, American, married. Has handled all kinds of stock, cotton, wool and shoddy mixes on yarns from 1 to 6 run. Has been employed for a number of years in leading mills. First class reference. 3815, Textile World Record, Boston, Mass.

Overseer of Carding and Spinning in woolen mill. Position wanted by a man 40 years of age, married. Worked on cassimeres, tweeds, ladies' dress goods, blankets, mackinaws, flannels and carriage cloths, D. & F. cards and mules and Johnson and Bassett mules. Would prefer a position in the west or middle west. 3464, Textile World Record, Boston.

Overseer of Carding. Position wanted by a man 31 years of age and married. Has worked on kerseys, meltons, beavers, ladies' dress goods, men's suitings, all kinds of knit goods, and thoroughly understands all kinds of mixes and stock. Is familiar with all kinds of woolen carding machinery. Good references. 3530, Textile World Record, Boston, Mass.

Overseer of Carding. American with experience, wants first-class position. Worked on nearly all classes of woolen goods and on machinery used in woolen card room. Best of references. Wants position in the North. $4.00 per day. 3361, Textile World Record, Boston.

Overseer of Woolen Carding. American, 30 years of age, with experience on wool, wool and shoddy mixes, wool and cotton mixes and silk noils, wants a position in the East. Worked on D. & F. and Lombard cards and also on English cards. 3427, Textile World Record.

Overseer of Woolen Carding. 32 years of age, married, wants position in the East. Accustomed to cassimeres, cheviots, dress goods, wool, cotton and shoddy mixes, all wool, from 1 to 7 run. Worked on the machinery used in this work. 3436, Textile World Record.

Overseer of Woolen Carding. American, 28 years of age, with experience as second hand and overseer in some of the largest mills in New England, wants position in the East. Worked on all classes of woolen goods, and on nearly all makes of woolen cards. 3355, Textile World Record.

WOOLEN SPINNERS.

Overseer of Woolen Spinning. Position wanted by a man, 41 years of age, American, married; worked on all kinds of wool, cotton shoddy mixed goods, from one to five run. Familiar with D. & F., J. & B. and Bridesburg spinning machines. Good recommendations. 3755, Textile World Record, Boston.

Second Hand in a Woolen Spinning Room. Position wanted by a young man 30 years of age, single, has had a number of years' experience as spinner and has been allowed to fix his own machines. Would like to get a position as second hand where he could learn to fix mules under a good man. He is familiar with D. & F. or J. & B. machines, and wants a position in the West or Middle West. 3707, Textile World Record.

Second Hand in the Woolen Spinning Room. Position wanted by a man 31 years of age, single, worked on all kinds of yarn from 3/4 to 10 run on all kinds of stock, cotton, woolen shoddy, familiar with D. & F. mules and operators. First class refereces. 3715, Textile World Record.

Overseer of Woolen Spinning. Position wanted by a man, 55 years of age, American, married. Familiar with J. & B. mules. Good reference. 3797, Textile World Record, Boston, Mass.

Overseer of Woolen Spinning. Position wanted by a man, 45 years of age, American, married. Has worked on all kinds of stock, cotton, wool and shoddy. Familiar with the D. & F., J. & B., Brother Operators, Dancroft and Wright machines. Good reference. 3794, Textile World Record, Boston, Mass.

Overseer of Woolen Spinning. Position wanted by a man, 48 years of age, American, married. Has worked on all kinds of yarns from 3/4 to 8 run, all kinds of stock. Familiar with J. & B. and D. & F. spinning machinery. Good reference. 3804, Textile World Record, Boston, Mass.

Overseer of Woolen Spinning. Position wanted by a man, 48 years of age, American, married. Worked on all kinds of yarn from 1/2 to 10 run, all kinds of stock, wool, cotton and shoddy mixes. Familiar with J. & B., D. & F., Parr, Curtiss, Bideford, Pault Pavercroft mules. Will not go West or South. Good reference. 3810, Textile World Record, Boston, Mass.

Overseer of Worsted Drawing or drawing and spinning. Position wanted by a man, 29 years of age, single, English. Has worked on all grades of wool from the longest Scotch to the finest Australian wools. Familiar with all makes of English drawing, spinning and twisting machinery. Also Lowell machines. Good reference. 3799, Textile World Record, Boston, Mass.

Overseer of Worsted Spinning and twisting. Position wanted by a man, 32 years of age, single, English. Worked on all kinds of carpet and hosiery yarn and has been overseer in leading mills in England, Scotland and United States. Familiar with all kinds of worsted spinning machinery. Good reference. 3808, Textile World Record, Boston, Mass.

Overseer of Woolen Spinning. Position wanted by a man 40 years of age, widower, worked on all kinds of yarns, wool, cotton and shoddy mixed. Familiar with the J. & B. and D. & F. machines. First class recommendations. 3720, Textile World Record.

Overseer of Spinning, Winding and Reeling in a carpet mill. Position wanted by a man 34 years of age, American. Has worked on all kinds of goods and stock, wool, cotton and shoddy and worsteds. Is familiar with Davis & Furber machinery. Good references. 3678, Textile World Record, Boston, Mass.

Overseer of Spinning, Twisting and Winding. Position wanted by a man 39 years of age, married, American. Has worked on yarns from 7/8 run to 10 run, wool, cotton and shoddy mixes. Is familiar with Davis & Furber and Johnson & Bassett spinning machinery. Good references. 3567, Textile World Record, Boston, Mass.

Boss Spinner in a woolen mill. 32 years of age; American; familiar with Davis & Furber, Johnson & Bassett and English mules and twisters. First-class references. 3275, Textile World Record.

WOOLEN WEAVERS.

Overseer of Weaving or loom fixing in a woolen mill. Position wanted by a man, 43 years of age, French, married. Has worked on fancy worsteds, white and piece dye worsteds, woolens, and cotton worsteds. Has been loom fixer about ten years in leading mills. Has also taken a course in the correspondence school in weaving and warp preparations. Good reference. 3792, Textile World Record, Boston, Mass.

Overseer of Woolen Weaving. Position wanted by a man, 40 years of age, English, married. Worked on woolen, worsted and cotton worsted goods. Familiar with Crompton & Knowles looms. Good reference. 3806, Textile World Record, Boston, Mass.

Overseer of Woolen Weaving. Position wanted by a man, 43 years of age, married, Scotch. Has worked on all kinds of woolen goods, including kerseys, meltons, overcoatings, worsteds, cotton warp bed blankets, ladies' dress goods and army goods. Familiar with C. & K., D. & F. and Gilbert looms. Will not go West or South. Good reference. 3809, Textile World Record, Boston, Mass.

Overseer of Weaving or assistant designer in a woolen mill. Position wanted by a man, 37 years of age, married, American. Worked on beavers, kerseys, chinchillas, meltons, frieze, worsted and worsted cloakings. First class recommendations. 3737, Textile World Record, Boston, Mass.

Overseer of Weaving. Position wanted by a man, 39 years of age, American, married. Could take a position at short notice. Familiar with all kinds of woolen and worsted goods. First class recommendations. 3727, Textile World Record, Boston, Mass.

Overseer of Weaving. Position wanted by a man, 40 years of age, married, an American. Worked on cheviots, ladies' dress goods, janes and woolen goods of all kinds. Familiar with the Crompton & Knowles looms. Good recommendations. 3725, Textile World Record, Boston, Mass.

Woolen Boss Weaver. Worked on worsteds, woolens of all kinds, also dress goods. American; 38 years of age; married. 3231, Textile World Record.

Overseer of Weaving. Position wanted by a man 42 years of age, American, married, worked on all kinds of woolen and worsted goods, familiar with Crompton & Knowles and Crompton & Thayer and Jacquard looms, first class recommendation. 3694, Textile World Record.

Overseer of Weaving or Second Hand in large mill. Position wanted by a man 41 years of age, an American, married, has worked on cassimeres, fancy worsteds, suitings, dress goods and overcoatings, has had many years' experience in leading mills, understands the Crompton & Knowles looms, good references. 3703, Textile World Record.

Overseer of Weaving. Position wanted by a man 34 years of age, married. American. Has worked on cotton goods, cassimeres, fancy worsteds, and all kinds of woolen goods. Is familiar with Crompton & Knowles looms. Good references. 3687, Textile World Record, Boston, Mass.

Overseer of Weaving. Position wanted by a man 41 years of age, married, German. Has worked on wool and worsted goods of all descriptions, and is familiar with Crompton & Knowles and Crompton Thayer looms. First-class references. 3634, Textile World Record, Boston, Mass.

Overseer of Weaving. Position wanted by a steady, strictly temperate and reliable married man. Has a good record for being a manager of help and a hustler for production. Worked in last place 12 years on all kinds of woolen goods; is now employed. Used to Crompton & Knowles and Crompton & Thayer looms. 3623, Textile World Record, Boston, Mass.

Overseer of Weaving. Position wanted by a man 39 years of age, American. Has worked on unions, cassimeres, shirtings and overcoatings. Is familiar with Crompton & Knowles looms. Good references. 3601, Textile World Record, Boston, Mass.

FINISHERS.

Foreman of Finishing or Calenders. Position wanted by a man, English, 35 years of age and married. Has worked on pocketings, silesias, satteens, linings, etc. Calender and Schreiner finishes a specialty. Understands all kinds of calenders, Buttes stretchers, stenters, dampers, mangles, etc. Good references. 3490, Textile World Record, Boston.

Overseer of Finishing. Position wanted by an American, 40 years of age and married. Worked on all kinds of woolen and worsted goods and satinets. Familiar with all kinds of finishing machinery. 3475, Textile World Record, Boston.

Overseer of Finishing. Position wanted by an American, 29 years of age, not married. Worked on all kinds of dress goods, face finish worsteds, cheviots and piece dyeing. Familiar with Parks & Woolson, Hunter and all kinds of American machinery. Has good references. 3476, Textile World Record, Boston

Overseer of Finishing in Woolen Mill. Position wanted by a man 41 years of age, married, American, finished cassimeres, fancy and cotton worsteds, beavers, meltons, dress goods, first class reference. Can take position at once. 3706, Textile World Record.

Overseer of Finishing. Position wanted by a man 32 years of age, married, American. Has worked on all kinds of cotton worsteds, fancy and piece dyed worsteds and woolens. Is familiar with all kinds of finishing machinery. Good references. 3642, Textile World Record, Boston, Mass.

Overseer of Cotton Finishing. Position wanted by a man 37 years of age, married, Swede. Has worked on all kinds of cotton goods, plaids and stripes, in all departments of the finishing room. Is familiar with Butterworth finishing machinery. Good references. 3638, Textile World Record, Boston, Mass.

Overseer of Finishing. Age 30, American, unmarried, with 6 years' experience as overseer, wants position in New England. Had experience on satinets, unions, and all goods where cotton warp is used, also on nearly all machinery used in making these goods. 3335, Textile World Record.

Overseer of Woolen Finishing. 33 years of age, married, with experience on beaver, kersey, cassimere, covert, thibet, worsted, dress goods, government goods, etc. Understands Curtis & Marble, Park & Woolson machines. 3402, Textile World Record.

Overseer of Finishing. American, first-class in every respect, with good references, wants position. Is accustomed to all classes woolen and worsted goods and all kinds of machinery used in his work. 3383, Textile World Record.

Overseer Finishing, or Stock Dyeing and Finishing. Worked on Union cassimeres, satinets, all wool cassimeres, cheviots, dress goods, meltons and kerseys; 39 years of age; single; Scotch, with first-class reference from past employers. 3449, Textile World Record.

Boss Finisher. Worked on broadcloth, cheviots, kerseys, coverts, thibets, meltons, piece dyes and dress goods. Familiar with all kinds of finishing machinery; prefers a position in Massachusetts. Age 28; American; first-class references. 3046, Textile World Record.

Overseer of Finishing. Position wanted by a man 41 years of age, married, American. Has worked on fancy cassimeres, unions, kerseys, cloakings, dress goods, friezes, cheviots, thibets, worsteds, etc. Is familiar with all kinds of finishing machinery. Good references. 2677, Textile World Record, Boston, Mass.

Overseer of Finishing. Position wanted by a man 26 years of age. Married and American. Has worked on kerseys, broadcloths, thibets, meltons, fancy worsteds, piece dyes, cassimeres, flannels, and dress goods. Is familiar with all kinds of finishing machinery. Good references. 3576, Textile World Record, Boston, Mass.

Overseer of Finishing. Position wanted by a man 46 years of age, married, American. Has worked on all kinds of woolens and worsteds, overcoatings, cloakings, dress goods, plushes, satinets and cotton warp fabrics. Is familiar with all kinds of finishing machinery. Good references. 3654, Textile World Record, Boston, Mass.

DYERS.

Bleacher and Dyer of cotton knit goods. Position wanted by a man 27 years of age, married, English. Has worked on web dyeing and bleaching, also garnet dye and bleaching, aniline black on hosiery. Will not go south. Good reference. 3763, Textile World Record, Boston.

Overseer of Dyeing or second hand in a large mill. Position wanted by a man, 23 years of age, single, American. Worked on flannels, worsteds, satinets, kerseys, cloakings, cotton wool and shoddy raw stock, piece dyes and yarns. Good reference. 3791, Textile World Record, Boston, Mass.

Overseer of Dyeing and bleaching. Position wanted by a man, 28 years of age, single, American. Has worked on cotton warp, short and long chain, raw stock, piece goods. Has had a wide experience on awnings tickings, cotton worsted suitings, flannels, ginghams and indigo dyeing. Familiar with the Klauder & Weldon and Delehanty machines and jig dyeing machines. Good reference. 3789, Textile World Record, Boston, Mass.

Overseer of Dyeing. Position wanted by a man, 45 years of age, Scotch, married. Has worked on raw stock, cotton and woolen goods, knit goods in the garment and in the roll. Familiar with all kinds of dyeing machinery used in the dyeing of knit goods. Prefers a position in New York State. Good reference. 3803, Textile World Record, Boston, Mass.

Overseer of Dyeing in a woolen mill. Position wanted by a man, 37 years of age, single, American. Has worked on piece dyes, raw stock, cotton, wool and shoddy, yarns, etc. Good reference. 3812, Textile World Record, Boston, Mass.

Overseer of Beetling Department. Position wanted by a man, 43 years of age, married. Irish. Has had ten years' experience on cotton goods in this country, twelve years' experience on linen goods in Ireland. Has worked on cotton goods of all counts from 67 by 72 to 96 by 32, also handled all kinds of beetling machines. Will not go South or Canada. Good reference. 3807, Textile World Record, Boston, Mass.

Overseer of Dyeing. Position wanted by a man 43 years of age; married; Scotch. Worked on cotton, wool and worsted dress goods, knitting yarns. Good reference from mills in Scotland where he has been employed as manager of dye and finishing works. 3456, Textile World Record.

Overseer of Woolen Dyeing. Englishman, 40 years of age, with experience on all kinds of raw stock, fancy piece dyes, worsteds and indigoes. Been overseer 15 years in good mills. Wants a position in the East. Good recommendations. 3433, Textile World Record.

Overseer of Cotton Dyeing. 40 years of age, with experience on coarse and fine ginghams, dress goods, raw stock, Indigo blue, alizarine reds and all fancy colors, also on jig dyeing. Good references. 3428, Textile World Record.

Overseer of Woolen Dyeing. 31 years of age; English; married; with experience on blankets, flannels, cotton warp goods, kerseys, thibets, raw stock, etc. Wants a position in the East. Good references. 3438, Textile World Record.

Overseer of Dyeing or Second Hand. American; 25 years of age; worked on woolen piece dyes and raw stock and on different kinds of machinery used in dyeing. Would accept a position anywhere that would mean advancement. 3418, Textile World Record, Boston.

Overseer of Woolen Dyeing. American; 34 years of age; accustomed to broadcloths, kerseys, dress goods, raw stock, piece dyes and to all machinery used in his work. A1 man, with best of recommendations. 3180, Textile World Record.

Overseer of Dyeing in a woolen mill. Position wanted by a man 26 years of age, single; has had experience on raw stock and piece goods. Good reference. Will not go west, south or Canada. 3779, Textile World Record, Boston.

KNITTERS.

Superintendent or Overseer of a knitting mill. Position wanted by a man, 27 years of age, American, married; worked on men's, women's and children's hosiery, cotton, woolen and silk. Familiar with Standard, B. & F., Acme, Victor, Brinton and Branson knitting machines, M. & W. Ruth, Brinton, Branson, Scott & William & Pepper ribbers. Will go any place for a good position. First-class recommendations. 3757, Textile World Record, Boston.

Boss Knitter or assistant superintendent. Position wanted by a man 30 years of age, American. Worked on wool, shoddy, cotton, mercerized fleeces, single and double ribbed, and flat goods on Tompkins Bros., Campbell & Clute, Scott & Williams, McMichael & Wildman, Nye & Tredick, Stafford & Holt machinery. 3465, Textile World Record, Boston.

Boss Knitter. Worked on sweaters, toques, both woolen and worsted, cylinder and flat machines. Could take position in one week's notice. First-class recommendations; 33 years of age; married. 3278, Textile World Record, Boston, Mass.

Overseer of Knitting. Position wanted by a man 34 years of age, English. Has worked on sweaters, jerseys and union suits. Is familiar with Pepper, Nye & Tredick, and Stafford & Holt knitting machines. Good references. 3621, Textile World Record, Boston, Mass.

Boss Knitter and machinist. Worked on hosiery, mittens, underwear, fancy shirt bands and shawls. Familiar with all kinds of knitting machinery. German, 39 years old, married. 1059, Textile World Record, Boston.

Superintendent, or Overseer of Knitting in a Hosiery Mill. Position wanted by a man 33 years of age, single, has worked on ladies', men's and misses' wool, worsted and cotton seamless hosiery on Wildman, Scott & Williams, Ruth and Brinton ribbers, Hepworth and Beatley loopers, Acme and Geor. D. Mayo automatic foot machine. Good recommendations. 3698, Textile World Record.

Superintendent or foreman of knitting. Position wanted by a man 25 years of age, American. Is experienced on men's, women's and children's gloves and mitts, fine-stitch toques and hosiery on worsted and saxony Creelman machines. Is familiar with the Lamb machine, more especially on gloves and mitts, the Brinton full automatic machine and the Creelman hosiery machine. Will be open for engagement about Sept. 1st. First-class references. 3611, Textile World Record, Boston, Mass.

Superintendent or overseer of knitting. Position wanted by a man 41 years of age; married; American. Has worked on all classes of underwear and hosiery on spring and latch needle. Is familiar with all makes of knitting machinery. Good references. 1874, Textile World Record, Boston, Mass.

Foreman of Knitting Room. Age 29; American, unmarried. Fleece of all kinds and gauges. Balbriggan from 20 to 30 gauge. Flat work wool goods. Tompkin Bros. and Campbell & Clute machines. Will not go South. 3204, Textile World Record.

Manager of a Hosiery Mill. Familiar with woolen, worsted and cotton and full-fashioned seamless hosiery. 45 years old, American. First-class references. 1657, Textile World Record, Boston, Mass.

Superintendent of Hosiery Mill. American, 40 years of age, with a number of years' experience as overseer, would accept a good position anywhere in United States. Worked on cotton and lisle hosiery, fashioned, seamless, lace, embroidered and plain, and on nearly all makes seamless machines and all others used in an up-to-date mill. 3352, Textile World Record.

Superintendent of Knitting Mill. American, 28 years of age, with experience on flat wool and cotton, all wool sweaters, rib goods of wool, worsted cotton and cotton plaited. Understands nearly all kinds of machinery used in making these goods. 3348, Textile World Record.

MISCELLANEOUS.

Overseer of slashing, drawing in, spooling, warping and beaming. Position wanted by a man 46 years of age; married and American. Is experienced on colored and white work, and familiar with Saco & Pettee, Lowell, and Draper machinery. Good references. 3600, Textile World Record, Boston, Mass.

Boss Dyer, Mercerizer and Bleacher. Worked on wool yarns, cotton piece goods, and familiar with slubbing. 43 years of age, married, good references. 3097, Textile World Record.

Second Hand in Cloth Room wants position as overseer or second hand; 20 years' experience on all kinds of goods; understands napping thoroughly; good references. 3048, Textile World Record.

Roller Coverer, or Overseer of Roller Covering. Position wanted by a man 28 years of age, married. Has had a wide experience on all kinds of rollers used in woolen or worsted mills. Is familiar with the different methods of roller covering. Good references. 3662, Textile World Record, Boston, Mass.

Bookkeeper in woolen, worsted or yarn mill. Position wanted by an American, 33 years of age, married. Has the best of references. 3477, Textile World Record, Boston.

Overseer of dressing. American; married. Wool, worsted and cotton worsteds. 3165, Textile World Record.

Overseer of Tenter Frames in Cotton Mill. Position wanted by a man 44 years of age, married, Scotch. Has worked on sateens, lawns, mull skirtings and shirtings. Is familiar with Butterworth, Stewart and Granger tentering frames. Good references. 3651, Textile World Record, Boston, Mass.

Overseer of Dressing. Position wanted by a man 38 years of age, American. Has worked on all kinds of worsteds and woolens, dress goods, etc. is familiar with Davis & Furber. Good references. 3663, Textile World Record, Boston, Mass.

Overseer Cloth Room. Worked on lenos, lawns, sateens, twills and most all kinds of cotton goods; 36 years of age; married. Will go any place for a good position. English. 3451, Textile World Record.

Overseer of Finishing. Position wanted by a man thoroughly familiar with all kinds of cotton goods and all kinds of machines in common use in a colored cotton mill. Has finished ginghams, flannels, blankets, fancy dress goods and endless variety of goods made in a fancy cotton goods mill. Strictly temperate and reliable. First-class recommendations. 1649, Textile World Record, Boston, Mass.

Overseer of Dyeing. Position wanted by a man 34 years of age, married, American. Has worked on raw stock, piece dyes, cotton warp, shoddy and silk noils, and all kinds of woolen goods. Is familiar with all kinds of dyeing machinery. Good references. 3672, Textile World Record, Boston, Mass.

Overseer of Dyeing, Bleaching, Mercerizing or Dyestuff Salesman. Position wanted by a man 45 years of age, married, English. Has worked on all kinds of woolen and cotton yarns and is familiar with all kinds of dyeing, bleaching and mercerizing machinery. First-class references. 3686, Textile World Record, Boston, Mass.

goods. Familiar with all kinds of machinery used

Overseer of Beaming, Spooling and Quilling. Position wanted by a man 40 years of age, married, an American. Worked on all kinds of cotton in a beaming department. Good references. 3688, Textile World Record, Boston, Mass.

Overseer of Grey Room. Position wanted by a man 33 years old. Worked on cottons, cotton warps, worsteds, woolens, and silk warp goods. Could take position at one week's notice. Good reference. 3488, Textile World Record.

Overseer of Dyeing. Position wanted by a man, Swedish, 35 years of age, married. Has worked on worsted yarns, raw stock, wool and all kinds of cotton raw stock, piece dyeing, union dyeing and warp dyeing and sizing. 3491, Textile World Record, Boston.

Overseer of Weaving. Worked on sheetings, twills, sateens and fancies. Wants not less than $18 per week. 3157, Textile World Record.

MISCELLANEOUS.

Overseer of Cotton Bleaching, Singeing or Gray Room. Position wanted by a man, 26 years of age, English, married. Has worked on all kinds of cotton piece goods, familiar with all kinds of machines used in the handling of these goods. First-class reference. 3766, Textile World Record, Boston.

Designer in a Cotton Mill. Position wanted by a man, 33 years of age, English; has worked on ladies' dress goods, shirtings, ginghams, lenos and jacquard patterns. Will not go west, south or Canada. Good reference. 3780, Textile World Record, Boston.

Second Hand over Warping and spooling in a cotton mill. Position wanted by a man, 60 years of age, widower; worked on tickings, awnings, shirtings, flannels, sail cloths, prints, etc. Will not go south. Good reference. 3778, Textile World Record, Boston.

Master Mechanic. Position wanted by a man 44 years of age; has had experience as master mechanic in cotton and knitting and all textile mills. Will not go west, or Canada. Could take a position at short notice. 3782, Textile World Record, Boston.

Overseer of Dressing, Spooling and Winding. Worked on all kinds of woolen and worsted men's wear and ladies' dress goods. First-class references. 31 years of age; Scotch. 3269, Textile World Record, Boston, Mass.

Overseer of Cotton Spinning. Position wanted by a man, 32 years of age, married, Canadian. Has worked on all kinds of cotton goods and is familiar with all numbers, coarse and fine, all kinds of cotton spinning machinery. Prefers a position in the N. E. States. Good reference. 3785, Textile World Record, Boston, Mass.

Overseer of Spooling, warping, twisting, winding and dressing in a cotton mill. Position wanted by a man, 27 years of age, single, American. Has worked on all kinds of yarns, from 10s to 20s, white and colored. Familiar with all kinds of machines used in this department. Will go any place for a good position. Good reference. 3811, Textile World Record, Boston, Mass.

Overseer of Cotton Carding in a large mill or carder and spinner in a small mill. Position wanted by a man, 35 years of age, American, married. Worked on white and colored work, both fine and coarse numbers. Familiar with all kinds of carding machinery. Good reference. 3784, Textile World Record, Boston, Mass.

Overseer of Cotton Carding. Position wanted by a man, 37 years of age, Irish-American, married. Has worked on all kinds of cotton goods. Familiar with all kinds of cotton carding and picking machinery. Good reference. Could accept a position at one week's notice. 3805, Textile World Record, Boston, Mass.

Overseer of Cotton Weaving. Position wanted by a man, 42 years of age, American, married. Worked on plain and fancy cotton goods, lappett, lenos and box work sateen worsted, either all wool or cotton mixed. Familiar with Mason, Lowell, Whitin, Draper, Crompton & Knowles, Kilburn and Lincoln looms. Good reference. Could take a position at short notice. 3798, Textile World Record, Boston, Mass.

Overseer of Dressing and spooling in a woolen mill. Position wanted by a man, 28 years of age, American, married. Worked on fancy woolen worsted and cotton worsted, cassimeres, etc. Familiar with all kinds of dressing and spooling machinery. Good reference. 3816, Textile World Record, Boston, Mass.

Overseer Milling, Mercerizing and Bleaching. 45 years of age, with large experience in England and Scotland on all classes of cotton goods and the machinery used in this work. 3414, Textile World Record.

Overseer of Winding, filling, warping or spooling. Has had considerable experience in keeping mill books. Would consider position taking charge of shipping. American; age 26; single; good references. 3242, Textile World Record.

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The question of expansion to meet the growing demands of trade is becoming a serious problem with many manufacturers, and those in this position find that much depends upon the plant having been laid out with an eye to future growth.

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Write for prices on "PLYMOUTH" Manila and Sisal baling rope.

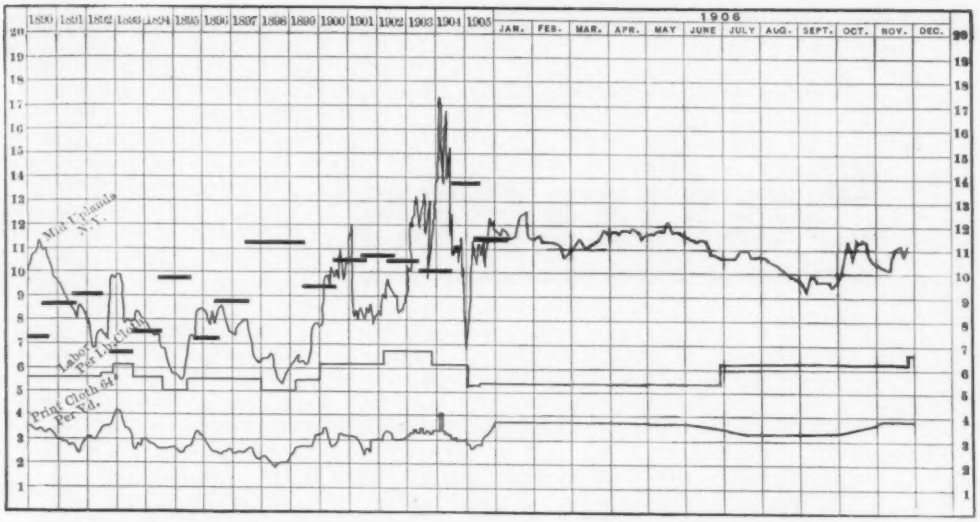
The matter of installing power equipment intended to meet the requirements of future growth of the business has been greatly simplified by the use of rope drives as a means of distributing power.

Our book on "Rope Driving" goes into the whys and wherefores of this proposition and also describes the many other advantages of rope transmission. Sent free to power plant owners.

Plymouth Cordage Co.

ESTABLISHED 1824

North Plymouth Mass., U. S. A.


1880 1881 1882 1883 1884 1885 1886 1887 1888 1889 1900 1901 1902 1903 1904 1905
1906
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.
Mid Uplands N.Y.
Labor Per Pound
Print Cloth 64 Per Yd.

The short, heavy, horizontal lines indicate the size of the cotton crops in millions of bales.

CHART SHOWING RANGE IN THE PRICE OF COTTON TO DATE.

Cotton Market.

The quotations for cotton have reflected the conviction in the trade that the new crop will be far below that of 1904-05. This, coupled with the record rate at which cotton is being used by the mills makes for higher prices. There has been a good business in spot cotton throughout the South, in which both foreign and domestic spinners have taken part. The movement into sight has been heavy, the figures from Sept. 1 to Nov. 23, compiled by the "Chronicle" for a series of years being as follows:

1901, Nov. 29	4,690,396	bales.
1902, Nov. 28	4,956,443	bales.
1903, Nov. 27	4,840,715	bales.
1904, Nov. 25	5,647,741	bales.
1905, Nov. 23	4,971,698	bales.
1906, Nov. 23	5,166,725	bales.

The visible supply is estimated by the same journal as follows:

	1906	1905	1904	1903
American	3,301,721	3,721,561	3,360,765	2,866,589
East India	795,000	823,000	551,000	493,000
	4,096,721	4,535,561	3,911,765	3,359,589

These figures, along with the large consumption of cotton by the mills afford no grounds for expecting much lower prices for raw cotton. On the contrary they disclose a condition that is the bull speculator's opportunity, and which carries its obvious lesson to every spinner. That the spinners see the danger is evident from the heavy movement into sight at advancing prices.

*Rhode Island, Pawtucket. The Solway Dyeing & Textile Co., consolidation of plants at Pawtucket and Westerly, R. I., expects to start operations in the new building erected, about January, with equipment of 500 looms. They will manufacture fancy cotton and silk piece goods and dyeing cotton yarns in warps and skeins, for the trade. A. F. Steine is president of the company; Wm. Halliwell, vice-president and buyer for dyeing department; Robt. Sow, buyer for mill department. Product is to be sold direct.

WONALANCET COMPANY
NASHUA JUNCTION, N. H.
Manufacturers of a superior grade of
CARDED COTTON
Gulf and Peruvian—in the white
To Meet the Most Exacting Needs of
WOOLEN MILLS

WEIMAR BROS. MANUFACTURERS OF Cotton Mercerized Tapes,
SPOOL TAPES, BINDINGS AND NARROW FABRICS FOR UNDERWEAR AND OTHER TRADES.
Phone Connections. Works, 2046-48 Amber Street, PHILADELPHIA, PA.

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Are you using Wyandotte Textile Soda on your Satinets, Unions and all goods of similar nature?

In both the fulling and scouring processes Wyandotte Textile Soda may be used with marked success. If you have never used this soda for such purposes, many pleasant surprises await your trying it.

This is only one of the many uses which you will find in your mill for this unusual soda. Order from your supply house or write us for further information.

None Genuine except with a card bearing this Trade Mark

In Every Package.

The J. B. Ford Co.

SOLE MANUFACTURERS,

Wyandotte, Mich.

THIS SODA HAS BEEN AWARDED THE HIGHEST PRIZE WHEREVER EXHIBITED.

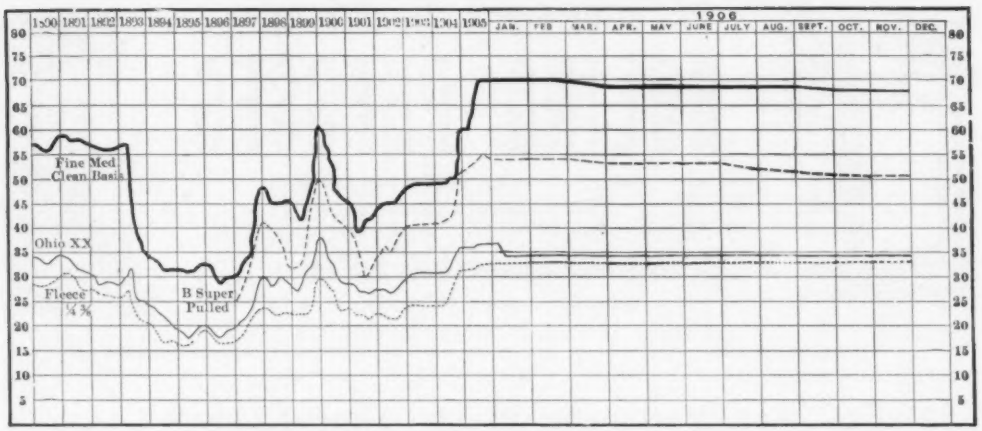

1900 1901 1902 1903 1904 1905
1906
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.
80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5
Fine Med. Clean Basis
Ohio XX
Fleece 1/4 ⅜
B Super Pulled

CHART SHOWING RANGES IN THE PRICE OF WOOL TO DATE.

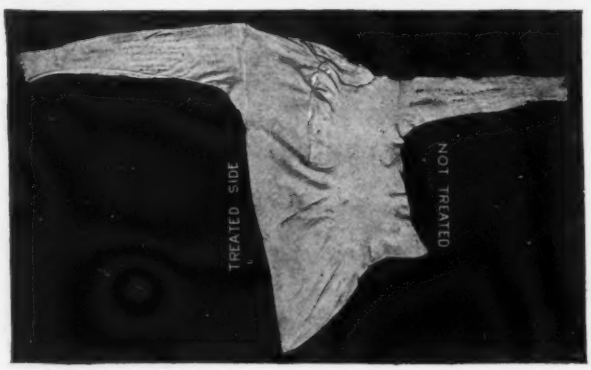
Wool Market.

The demand for wool has continued strong and a large quantity has been sold at current quotations. Quarter blood and pulled wools, which have been neglected for some time, have shared in the improved market. Prices have not advanced, but it is a seller's market. Much of the wool bought by manufacturers has been for quick delivery, which confirms the general opinion that the mills are carrying light stocks. With the new clip six months distant, this condition is calculated to prevent any decline, as far as a limited supply can. The mills have done a good business on light weights, despite the depression in the carded woolen branch, and the prospect is good for the coming heavy weight season. With no increase in the wool supply a material decline in wool prices can come only from a shrinkage in the demand, and the unparalleled prosperity of the country makes that a very remote possibility.

The wool market abroad is firm. Reports from Australia, South America and Europe all agree on this point. The seller finds it easy to sell, while the buyer is placed at a disadvantage. On many grades prices are distinctly above the point at which they can be imported into the United States at a profit.

Pennsylvania, Newville. It is reported that the Newville Knitting Company is contemplating locating the plant elsewhere owing to scarcity of help at this place. Sites have been visited at Chester, Pa., but nothing has been definitely decided.

TRADE IS DEMANDING NON-SHRINKABLE WOOL



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FOR WOOL

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Registered

IS WORKING A REVOLUTION

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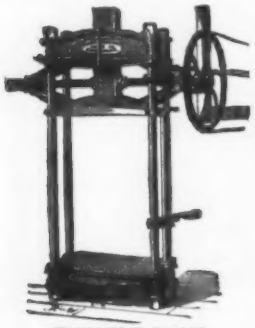
CHARLES H. HEYER

REAL ESTATE TRUST BUILDING

PHILADELPHIA, PA.



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BALING PRESSES

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Hydraulic or Knuckle Joint
Any Size .. Any Power

Boomer & Boschert Press Co.

338 West Water S., SYRACUSE, N. Y.
Southern Agent, A. H. WASHBURN, Charlotte, N. C.

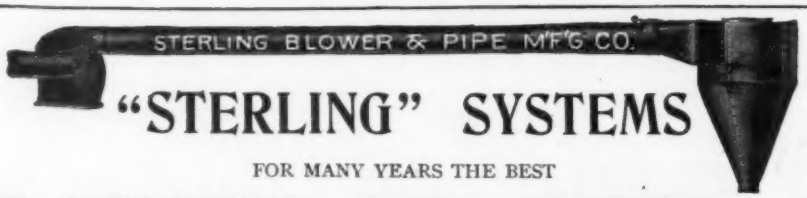
HYDRAULIC.

Handles heavy cases in a Time-Saving Way—The Economy Steel Tiering Machine

Goods are put in place with ease and economy. The largest amount of stock can be stored in the smallest possible space and yet be instantly accessible. In use in representative mills. Investigate its merits and 'twill be in use in yours. Write for prices.

Economy Engineering Co.

58-64 N. Jefferson St.
Chicago, Ill.



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FOR MANY YEARS THE BEST

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STERLING BLOWER & PIPE MFG. CO.

Write for "1906" Catalog.

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For 25 YEARS We have held OUR REPUTATION as Progressive Manufacturers. Do not forget this when ordering GAGES.

ORIGINAL SINGLE BELL CHIME WHISTLE

Harmonious
Far Reaching
Pleasing.

A Truthful Gage is the only GOOD GAGE.

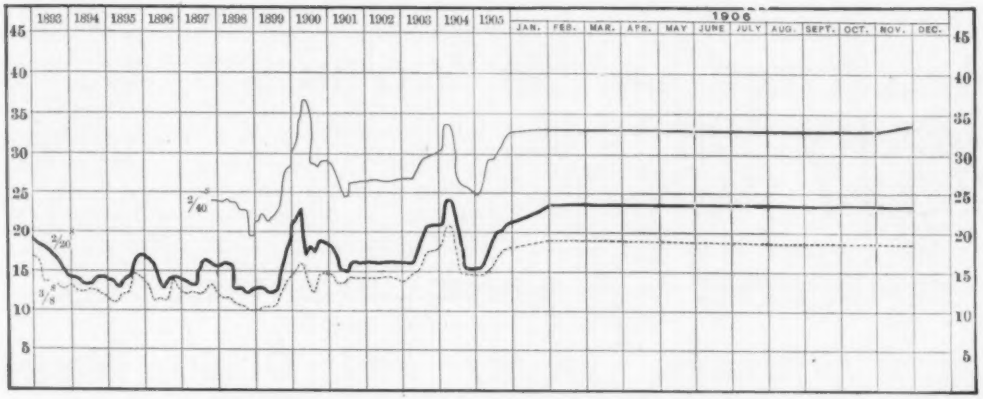
This Company manufactures, besides the above a large variety of articles used in connection with steam engines and boilers, all of which are standard quality, and may be relied upon. *Send for Catalogue.*

CROSBY STEAM GAGE & VALVE CO.

Stores: BOSTON, NEW YORK, CHICAGO, LONDON.

Office and Works:
BOSTON, MASS.

Yarn Department.



GRAPHIC CHART SHOWING RANGE OF PRICE OF COTTON YARN TO DATE.

Cotton Yarn Market.

The demand is far beyond the capacity of the mills. Yarn is being shipped to fill old contracts as fast as it comes from the spinning mills. Knitters and weavers have suffered severely from inability to get yarn enough to keep their machinery in operation. This condition is so pronounced that the fluctuations in the raw cotton market have practically no effect on the price of yarn. Many of the yarn mills are refusing further orders even at advanced prices because of the impossibility of their filling the contracts. The production of the spinning mills is limited by the supply of operatives, and in many cases spinners have been forced to decline orders for yarn while spinning frames were idle waiting for help. The conditions are so peculiar and the wants of buyers so pressing that quotations are in a great degree nominal.

We quote as follows:

Eastern Cops.

6s	20
8s	20¼
10s	20¾
14s	21¾
16s	22¼
18s	22¾
20s	23¼
22s	23¾
24s	24¼
26s	25¼
30s	26¼
34s	27½
36s	28½
40s	32

On cones, ¾c. more up to 14s; 1c. more from 15s to 22s; 1½c. from 23s to 35s, and 2c. above that.

Eastern Two-Ply Skeins, Carded Peeler.

12s	22½
14s	23
18s	24½
20s	26
24s	27
26s	30
30s	33
36s	38
40s	40
45s	45
50s	50
55s	53
60s	56

Eastern Two-Ply Warps, Carded Peeler.

2/30s	35
2/36s	38
2/40s	40
2/45s	45
2/50s	50
2/60s	56

Egyptian Weaving Yarns.
Single Skeins Combed.

30s	39
36s	41
40s	43
45s	46
50s	50
55s	53
60s	56
70s	62

Philadelphia Yarn Market.

The cotton yarn market has maintained its strong position the last few weeks, and from present indications there will be no weakening in prices in the immediate future. Spinners are well supplied with orders, and during the last few

THE J. R. MONTGOMERY CO.,

Windsor Locks, Conn.

MANUFACTURERS OF

Mercerized Cotton Yarns Gives the High Silk-Like Lustre in Knit Goods and Woven Fabrics.

Novelty Yarns Boucle, Bourette and Spirals, in Cotton, Wool, Worsted, Mohair and Silk.

Cotton Warps on Beams, Jack Spools and Tubes. In Fancy, Twist, Colors and Printed.

GREENE & DANIELS MFG. CO.,

COMBED, CARDED AND GASSED

Yarns, Threads, Twines and Chain Warps.

DYE SULPHUR BLACKS DIRECT IN COPS, CONES OR TUBES.

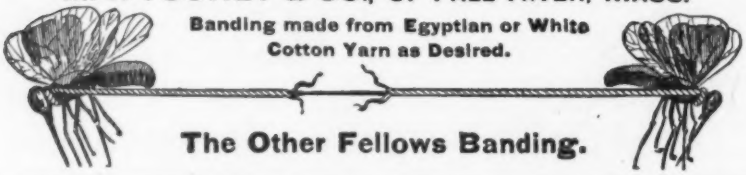
Colored and Bleached Yarns Furnished in any manner desired by the trade.

Pawtucket, R. I.

THESE MULES CANNOT BREAK THE BANDING —MADE BY—

M. J. TOOHEY & CO., OF FALL RIVER, MASS.

Banding made from Egyptian or White Cotton Yarn as Desired.



The Other Fellows Banding.

MONUMENT MILLS,

Manufacturers of White, Colored, Fancy and Double Twist

COTTON WARPS

HOUSATONIC, MASS. 4s to 60s.

Dana Warp Mills

WESTBROOK, ... MAINE

White and Colored Warps 6s to 50s Single and Ply

Mule Cops From 30s to 50s from American & Egyptian Cotton

months the demand for the fine numbers has kept the market absolutely bare of stock; on this class of yarn all spinners are well supplied with orders to run them into the spring months.

While there seems to be plenty of cotton it is not a good spinning grade, and choice cotton is commanding an unusual premium. In fact, holders of staple cotton can get large advances on current quotations.

Trade on yarn for spot delivery has been very good. Owing to the unexpected delays on the part of spinners in delivering contracts, and to the large number of yarn buyers who have been buying in small quantities expecting a break in the market, the recent temporary slump in cotton had practically no effect on the yarn market. Prices were held firm, and it is still a seller's market.

We quote as follows:

Southern frame spun cones:—

7s and coarser	20
8s and 9s	20
10s	20½
12s	21
14s	21½-22
16s	22½
18s	23½
20s	24
22s	25
24s	25½-26
26s	27
30s	29
40s	36
50s	44

Southern high grade mule yarn:—

Cones.

10s	22
12s	22½
14s	23
16s	23¾
18s	24½
20s and 22s	25½
24s	26½

Southern frame yarn, lower grades:—

6s and 8s	19-19½
10s	20

Eastern cones (high grade quality):—

10s	23
12s	23½
14s	24
16s	24¾
18s	25½
20s and 22s	26-27

Skein yarn (mostly Southern):—

4s and 8s soft	19
10s to 12s	19½-20
14s to 20s	20½-22
22s	22½
14/2	21
16/2	22

JAMES E. MITCHELL CO., COMMISSION MERCHANTS.
Cotton Yarns
AND COTTON CLOTHS.
122-124 Chestnut Street, PHILADELPHIA, PA.
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Brown Building, 185 Summer Street, BOSTON, MASS.

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345 Broadway, NEW YORK.
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Dry Goods Commission Merchants,
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TOLAR & HART
Cotton Yarns and Cotton
TEXTILE BUILDING
Members of New York Cotton Exchange
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530 Broadway, - NEW YORK.
MERCERIZED TURKEY RED GASSED } COTTON YARNS.

E. D. LORIMER & CO.
COTTON YARNS
MERCERIZED YARNS } ALL NUMBERS FOR ALL PURPOSES
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Successor to MOELLER & LITTAUER.
SILK, WORSTED, WOOLEN YARNS COTTON AND MOHAIR
Polished Threads and Tinsel. Artificial or Wood Silk.
Mercerized, Turkey Red, Fine Gassed Yarns.
109 GREENE ST., NEW YORK.

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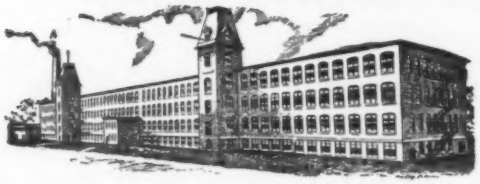

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Capacity, 45,000 Spindles.

HIGH GRADE YARNS

From Egyptian and Peeler Cottons, Carded or Combed, in Chains and Skeins, on Balls, Beams, Spools, Cops, Cones, Tubes, Single or Twisted.

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Carded and Combed Cotton Yarns for Weavers and Knitters
Double and Twist Yarns for Woolen Trade.

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COMBED AND CARDED COTTON.

YARNS 40's and above. AND
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Harness and Seine Twines and other Job Gassing, Winding, etc. All Numbers.

GASSED YARN SPECIALTIES

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Manufacturers of

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Jacquard Harness Twines of all kind on hand and made to order.

S.W. Cor. Fifth and Market Sts., Phila.

Wm. Chalmers & Co.

(Incorporated)

Imported and Domestic Cotton Yarns.

Turkey Red Yarns a specialty.
Correspondence solicited.

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Reels for Cotton WOOLEN AND WORSTED

Patented Hosiery Winders, Cop Winders and Spoolers.

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HIGH GRADE HOSIERY YARN

White and Colors. All Numbers.

Sewing Twines on Cones and Tubes.

SPECIALTIES IN WEAVING YARN.

Black and white. Double and twist for woolen trade.

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Cotton Warps and Yarns. In Gray and all Colors, Single or two or more Ply, and Cable Cord.

Novelty Yarns. in Various Patterns, Colors and Twists.

Carded and Colored Cotton. For Mixing with wool, Machined or in Roving.

Indian Orchard, Mass

The Morgan Press — H. K. Wright, Treas. — W. C. Godfrey, Agt.

20/2	24
30/2	31
40/2	38
16/3 slack	21
12/3 slack	20
8/3 carpet	19
8/3 slack	19
9/4 slack	19

Warps (Southern):—

10s to 12s	20-20½
14s	21
16s	21½
20s to 22s	22-23
26s	25
14/2	21½
16/2	22½
20/2	25
24/2	27
30/2	32
40/2	39

Mixed colored yarns (mock twist, half colors):—

6s to 10s	20-21
12s to 14s	21½-22
16s to 18s	22½-23

Mock Egyptian, 2c. advance over white.
Egyptian, 7 to 8c. above best quality white.

Worsted Yarn.

Spinners are finishing up orders for the light weight season. Those who are making grey mixes are very busy; those spinning straight white yarn are either without orders or are running slowly. The light weight season is about half over and no orders for yarn are being given for the season that is now on. Some good orders are being placed for the coming heavy weight season for delivery in January, February, and March at full rates. Spinners are holding well for prices quoted and whatever weakness was in the market five or six weeks ago has entirely disappeared.

None of the mills have wholly covered their requirements. Many have been willing to take a chance on a quantity which will start them in February and March, after which the real business of the year will be placed. Some of the weavers who bought early last year and have been all the year giving spinning instructions have placed no orders, preferring to take chances when their customers begin to give orders for cloth. This is especially true of those who have been making

Established 1863 *Incorporated 1899*

W. Warren Thread Works

Makers of High Grade

SPOOL COTTON

of every description for the manufacturing trades

Mills: Westfield, Mass.

LINEN YARN IMPORTER.

HUGHES FAWCETT, 115 Franklin Street, NEW YORK.

Flax, Hemp and Jute Line and Tow Yarns,
For Weaving Purposes.
Linen Jacquard Harness Twines,
Fine Cotton Harness and Heddle Twines,
For Cotton, Silk, Woolen and Carpet Manufacturers.
Correspondence solicited. Samples promptly furnished.

Mercerized and Plain
Skein, Warps, Cones, Cops, Tubes
COTTON YARNS
426 and 428 Market St., Phila.
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Lumber
THE CONNECTICUT BOX CO.
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WOOL, SILK, MOHAIR, CAMEL HAIR, RAMIE.
Ramie Tops, Ramie Noils, Silk Tops, Silk Noils, Ramie Yarns, Silk Yarns, Silk Noil Yarns.
Prepared Tussah Silk for Woolen Manufacturers, ready for immediate use on regular woolen machinery.

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Press Papers and Fender Boards
Correspondence Solicited
Mills at Rainbow, Conn. **Address Inquiries to Rainbow, Conn.**

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WORSTED YARNS

IN THE GRAY.

Mills at
Thornton, R. I.

Office
100 Boylston St., Boston, Mass.

French System. Bradford System.

B. F. BOYER CO.,

MANUFACTURERS OF

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Office and Mill, Delaware and Cooper Streets. CAMDEN, N. J.

Woolen and Merino YARNS

Eaton Rapids Woolen Mills,

EATON RAPIDS, MICH.

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Cotton, Woolen

Yarns and Braids

Worsted, Spun Silk.

PROVIDENCE, R. I.

RICHARD CAMPION,

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Bristol Worsted Mills,
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300 Chestnut Street,
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Offices: 229 Chestnut St., Philadelphia.

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Manufacturers of

Silk, Cotton and Mercerized Narrow Fabrics

Spool Tapes a Specialty.

Telephone Connection. Office and Mill, Allegheny Ave. and Emerald St., PHILADELPHIA.

YARNS Solis, Boston.

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SUMMER STREET.

ANDREW J. SOLIS, Jr. & CO.

HOFFMAN, DeWITT & McDONOUGH CO.,

Diamond Stay Bindings TRADE MARK

Manufacturers of

Tapes, Webbing and Bindings.

COTTMAN and G STS., PHILADELPHIA

Ryer's Station, P. & R. R. R.
Bell Telephone, 203 Cheltenham.

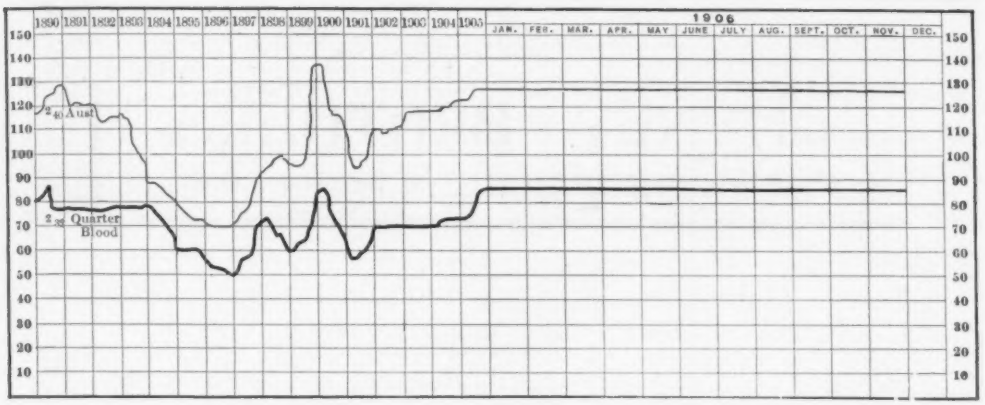

CHART SHOWING RANGES OF PRICE OF WORSTED YARNS.

worsted linings for overcoatings. Last year on account of the open winter but few orders were placed, even though the weavers had ordered the yarn out of which to make them. The yarn mostly in demand at present is 2/16s to 2/18s in from 3/8 to half blood quality. Much single yarn is being sold to a variety of different manufacturers, the sizes ranging from 12s to 24s.

Not so many mixes will be used in the heavy weights and therefore the business will be more evenly distributed among the spinners than was the case on light weights. As the season progresses the weavers will take up many propositions now pending which will result in ordering heavily of worsted yarn. Not more than two qualities will be used for the whole ordering. The coming heavy weight season is going to be a record breaker as far as the use of worsted yarn for men's wear is concerned. On dress goods it is a different proposition. At present these weavers are making cloth from grey mixes with cotton warp and 24s worsted filling. The coming demand is for plaids in undressed worsted or broadcloths with a check effect of dark colors. Much of this cloth will be made during the coming season and will result in the use of a finer grade of yarn.

The hosiery knitters are not buying yarn freely and much buying of these yarns will be from hand to mouth. At present much percentage yarn has been sold, part cotton and part wool, but the chances are that the trade will not long continue its use, as all worsted yarn will next season be in greater demand and at going prices. The bunting manufacturers have been ordering heavily and a good business is being secured in 1/4 blood 2/36s. The top combers continue busy, although more orders could be easily taken care of. Much single yarn in 12s is being called for by cotton spinners for twisting with cotton yarn and some good orders have been placed.

We quote:

2/40s Australian	1.28
2/40s Delaine	1.23
2/36s 1/4 to 3/8 Blood	95 to 1.00
2/32s 1/4 Blood	.85
2/20s 1/4 Blood	.82

Woolen Yarn.

Woolen yarn spinners are in a very bad position and many of them have been obliged to close down their mills. The orders from many sources have come to a sudden end and spinners are looking around for new ones. Many mills are entirely closed and will remain so until the turn of the year. It seems strange in this connection that previous to withdrawing the orders from the spinners some of the mills insisted on all possible machinery being used, but within forty-eight hours they had cut the spinners off entirely, even where they had agreed to run the machinery until the first of the year. This state of affairs will not last long as the heavy weight season will be on in January, when much yarn will be required and many orders are pending for delivery after January 1.

The dress goods trade is going to use more woolen yarn than has been the case for many years as the coming styles for plaids in broadcloth effects will set much machinery going. There is undoubtedly a better demand for woolen cloth than has been the case for some time.

Hosiery and knitting mills are going to require much outside machinery the coming year. The knitters are going to use much better grades the coming year than was required last year. The mills throughout the knitting districts are busy and

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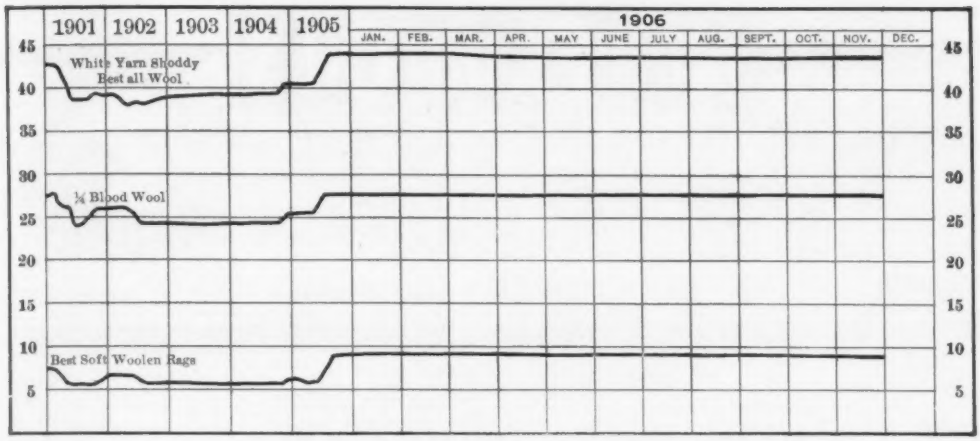

CHART SHOWING RANGE OF PRICES OF SHODDY, RAGS AND NOIL.

have but little stock on hand and will later be obliged to buy largely. The underwear salesmen are out and after December 1 the results of this business will be known and orders will be placed for stock of all kinds. The outlook after January is good for the woolen yarn spinners and many who have thrown down machinery space will be unable to secure the old machinery when the good business starts up. To be sure, the spinners are not happy at present, but everything will come out satisfactory after January 1, 1907.

Rag and Shoddy Market.

Dullness continues to rule these markets. A small amount of business is being transacted, but buyers confine their purchases to immediate requirements, and show no disposition to lag in stocks of either rags or shoddy in anticipation of future requirements. The neglect of wool substitutes while the price of wool is so high is due to the popularity of the worsted finish, which can be obtained by the use of cotton yarn, but not of shoddy. It is also a result of the present prosperity of the country, which has given the people increased power to purchase goods of all kinds, including worsted clothing. A revival in the rag and shoddy market can be brought about only by the return of the carded woolen cheviot to favor. Of this there are some indications, but not sufficient to exert any marked influence on either demand or prices. We quote as follows:

SHODDIES AND EXTRACTS.

White yarn, best all wool	44-47
White knit, all wool, best fine	35-40
White knit, No. 2	30-35
Light yarn, extra fine	30-35
New pure indigo blue	28-30

Merino.

Fine light, all wool	24-27
Medium light, all wool	15-17
Fine black, all wool	25-27
Fine dark, all wool, best grade	22-25
Medium dark, all wool, No. 1	18-20
Medium dark, all wool, No. 2	15-16
Red knit stock, strictly all wool	20-22
Red flannel, all wool	20-22
Dark blue for hosiery, strictly all wool, No. 1	20-22
Dark blue for hosiery, not all wool, No. 2	15-18

WOOLEN RAGS.

Fine merchant tailors	10-11
Choice light colors	13-14
Browns	12-13
Blacks	9-10
Fine blues, plain	9-10
Fine dark	12-13
Medium dark	7-8

Worsteds.

Blue	15-17
Black	21-22

Serges.

New black	16-18
New blue	14-16

Flannels.

New scarlet	19-20
New blue	15-16
Cloakings	3-4

SOFTS AND KNIT STOCK.

Soft woolens, best	9-9½
Old white flannels	23-24
White flannels, No. 2	11-12
Old red flannels	13½-14
Light blue flannels	7½-8½
Old blue flannels	9½-10
Old plaids	7-8½
White stockings	24-25

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Peeler, Egyptian, Mixed Colors.
Large Assortment.

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White hood stock	24-25
Clear hoods	9-10
Blue stockings	8½-9
Fancy stockings, No. 1	9½-11
Gray stockings	10½-11
Black stockings	11-12
Knit stock comforters	7-8
Red knit	13½-14
Light gray knit	10½-11
New light fancies	14-15
New fancies	11-12

Merinos.

Light, fine	16-17
Light, coarse	7¼-7½
Fine, dark	14½-15½
Coarse, dark	6½-6¾
Blue	11-12
Blue—seamed	
Black—seamed	15-16
New black	18-20
Small	4¼-4¾
Bunting	7-10

FLOCKS.

Shear, fine white, all wool	10-12
Fine indigo blue, all wool	7-8
Fine black and blue, all wool	6-7
Fine dark, all wool	2½-4
Gig, fine, all wool	2-3
No. 1 black, all wool cut	6-10

COTTON WASTE.

No. 1 Spinners	9½-9¾
No. 1 Machine Cop	8-8½
No. 2 Machine Cop	7-7½
No. 1 Cop	8½-9
No. 1 Card	8-8½
No. 2 Card	7-7½
No. 1 Oily Card	4½-5
No. 2 Oily Card	3½-4
Peeler Combing	8½-9
Egyptian Combing	8½-9
No. 1 Linters	5-5¾
No. 2 Linters	4¾-5
White Clips	4½-5
Colored Clips	1½-2¼

FIRE, LIGHTNING, WINDSTORM.

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Cash Capital, $3,000,000.

ASSETS January 1st, 1906	$21,239,052
LIABILITIES (Including Capital)	12,518,551
NET SURPLUS OVER ALL LIABILITIES	8,720,501
Surplus as regards Policy-holders	11,720,501
Losses Paid Since Organization Over	99,000,000

HOME losses at San Francisco cannot exceed $2,000,000. Note amount of net surplus.

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Dyestuffs and Chemicals.

Acids.

Acetic, 100 lbs.	2.00-2.65
Citric, domestic	45-45½
Oxalic	8¼-9
Sulphuric, 60 deg., 100 lbs.	1.00-1.20
Muriatic, 18 deg.	1.15-1.75
Tartaric crystals	27¾-28

Miscellaneous Chemicals.

Acetate of lime, gray, 100 lbs.	2.35-2.40
Alum, lump	1.75-1.80
ground	1.85-1.90
powdered	2.75-2.80
Aqua ammonia, 16 deg.	3¾-4
Ammoniac, sal., gray	6-6½
Borax, bbls.	7½-8½
Brimstone, crude, foreign ton	22.25
Copperas	47½-57½
Cream tartar, crystals	22¼-22½
Fuller's earth, lump, 100 lbs.	
powdered	80-85
Glauber's salt	50-60
Potash, chlorate, crystals	8½-9¼
powdered	8¾-9½
carbonate	3½-4
Soda ash, carbonate, 48 per cent.	1.20-1.30
high test	1.00-1.25
Soda, bicarbonate, English	
American	1.30-1.70
Soda, caustic, domestic, 60 per cent.	1.85-1.90
Sal. English	85-90
Sal. American	80-85
Sulphate, alumina	1-1¾
Vitriol, blue	7-7¼

Dyestuffs.

Acetate of soda	4¼-4½
Acid, picric, best crystals	21-26
tannic, commercial	32-35
Albumen, egg	56-75
blood	20-27
Alizarine, red	15½-16½
Aniline, oil	11½-12
salt crystals	10-10½
Antimony salt, 65 per cent.	25-27
Bichloride of tin, 50 per cent.	12¼
45 per cent.	9½-10½
Bichromate of potash, American	8⅛-8⅜
Bichromate of soda	6⅛-6⅜
Bisulphite of soda	80-1⅜
Cutch, mat	4½-5
boxes	5-7
Dextrine, imported potato	5¾-7
corn	2.75-2.90
Divi-divi, ton	48.00-50.00
Flavine	23-40
Fustic, stick, ton	17.00-20.00
young root	45.00
Gambier	4¼-4¾
Hypo. of soda, Am. bbls. cwt.	1.40-1.50
Indigo, Bengal, low grade	55-65
medium	62½-75

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high grade	77½-90
Kurpahs	50-60
Gautemala	35-70
Manila	45-50
Madras	45-50
J. (Synthetic)	18-20
Indigotine	95-1.80
Logwood, stick, ton	18.00-22.00
roots	16.00-18.00
Madder, Dutch	12-14
Muriate of tin, 36 degrees	9-9¼
52 degrees	15-15¼
Nitrate of iron, commercial	1⅛-1½
Nutgalls, blue Aleppo	23-25
Persian berries	7
Phosphate of soda	1.90-2¼
Prussiate of potash, yellow	17
Quercitron, ton	20.00-22.00
Starch, corn, pearl, bbls.	2.35
corn, pearl, bags	2.20-2.40
potato	3¾-4
rice	6¼-7
wheat	4¾-5¼
Stannate of soda	10-20
Sumac, Sicily, No. 1, ton	
Sicily, No. 2, ton	70.00
Tapioca flour	2½-4
Tin crystals	26-27
Turmeric, Madras	6½-7
Zinc dust	5⅝-6

Connecticut, Bridgeport. The W. S. Mills Company has been incorporated with capital stock of $150,000. W. S. Mills, T. J. Ferguson and Edward J. Daly are mentioned as interested. The company will continue the W. S. Mills plant.

Georgia, Byron. W. H. Ezell is mentioned as interested in establishing a hosiery mill at this place, to be operated by water power.

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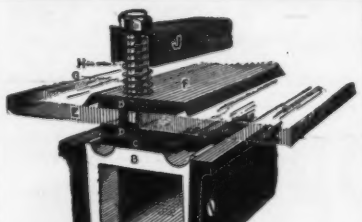

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that are designed and built with a wide and comprehensive knowledge of the actual every day requirements in these lines. In trucks as in other lines it pays to buy the best. *Bailey's trucks are the kind you need.* Once tried always used. Tell me your needs and I will tell you about the truck that meets them.

Frank Bailey, Manufacturer of Yarn Drying Machinery, Dry Poles, Dye Sticks and Fans, Works at Braddock, P. O. Address, Cedar Brook, Camden Co., N. J.

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Factories at
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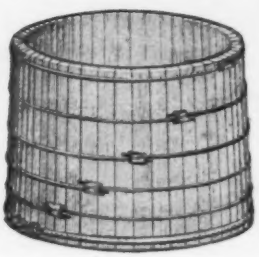

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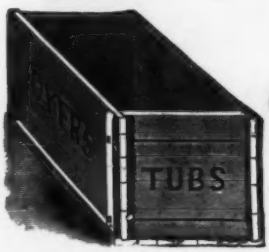
Sizing, Stiffening, Softening and Finishing Compounds, Glues, Gums, Dextrines, Starches, China Clay, Bone Size and Grease, Soap, Tallow, Weighteners,

EVERYTHING IN SIZINGS, Etc. SAMPLES MATCHED. HIGH GRADE GOODS.



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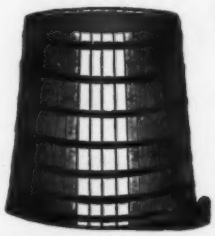

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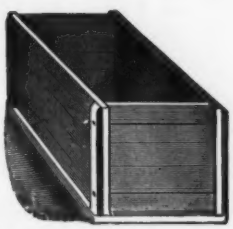

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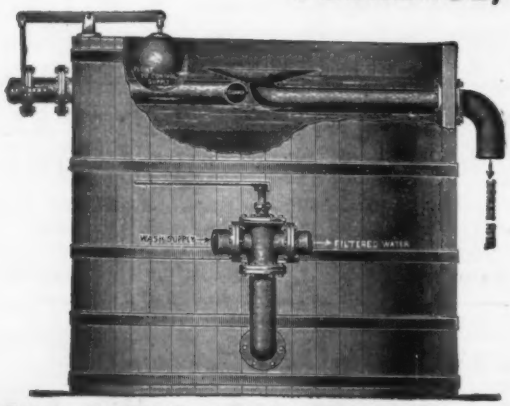

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Our filters are already in use in a number of the representative textile mills of the country, from whom we have received many expressions of satisfaction. Our representative will call and explain our system whenever desired.

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VACUUM MACHINE.

This machine will dye large, hard twisted, twine cops. It will dye or bleach any size of cotton cops. It will scour wool or worsted cops, cheeses and tops. It will scour or dye waste cops. This is a good machine to work in conjunction with the Vacuum and Pressure Machine for washing off, etc.

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Machines made of Iron	28	38	65	90

This machine will Dye, Bleach, Size and Scour Cotton Hemp, Woolen, etc., in the form of Cop, Cheese or quick traverse bobbins, any thickness or length.

This Machine will circulate absolutely boiling Dye or Size Liquor through every fibre of the yarn, whether it be cop or cheese which is under treatment, and it not only circulates this boiling Dye or Size Liquor, but it forces it into the fibre of the yarn under an even pressure of 10 lbs., and this is more than equal to 22 inches of vacuum; it is **three times** more effective than the ordinary Cop Dyeing Machinery.

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Can be depended upon to dye a perfectly even shade all through the yarn, and will dye the most delicate colors. It will dye silk Cops or treat them with any necessary liquor. It will scour or dye wool tops. It will scour or dye large hemp cops and cheeses. It will scour and dye waste cops. We are the Patentees and Sole Makers.

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We supply Two Sets of Skewers and Two Cop Plates with the Machine, whether it is for Weft Cops, Twist Cops or Cheeses.

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THE COHNEN
CENTRIFUGAL
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U. S. Patent 776,295, Nov. 29, 1904.

Dyes Raw Stock
or
Yarn in Cops, Skeins or Bundles (Warps)

DYES SULPHUR COLORS
without bronzing or streaking and leaves the stock in perfect condition for carding or weaving.

ONLY ONE HANDLING
is required to dye, oxidize and hydro extract ready for the drying room.

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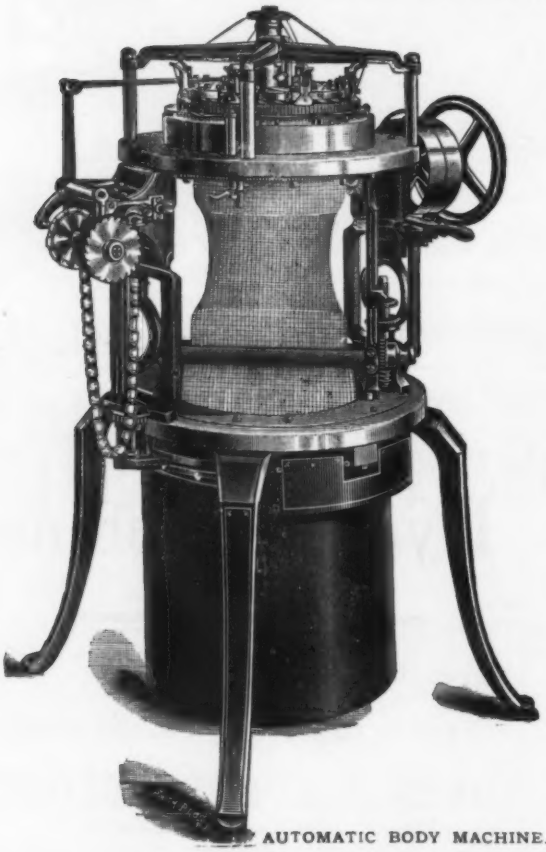
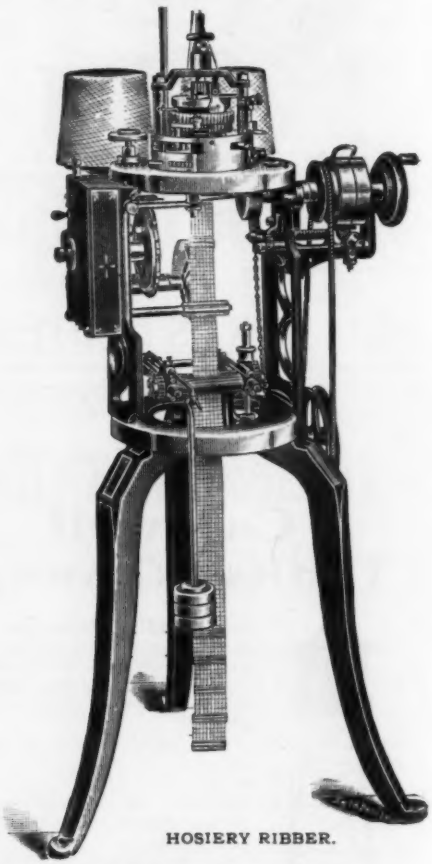
AUTOMATIC AND PLAIN

For all classes of Ribbed Hosiery and Underwear, Combination Suits, Sweaters, etc.



AUTOMATIC BODY MACHINE.



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ESTABLISHED REPUTATION FOR LARGEST PRODUCTION,
BEST QUALITY FABRIC, DURABILITY, ECONOMY OF OPERATION.

Full Particulars, Description and Samples Furnished upon Application to the

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The most advanced types of straight bar

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in Cotton-system, of superior quality and construction, with split, striping, single and double lace attachments.

Also machines with latch needles, hand or power motion, for the manufacture of Sweaters, Cardigan Jackets, Ladies' Blouses, Vests, Gloves, Mittens, etc.. built by

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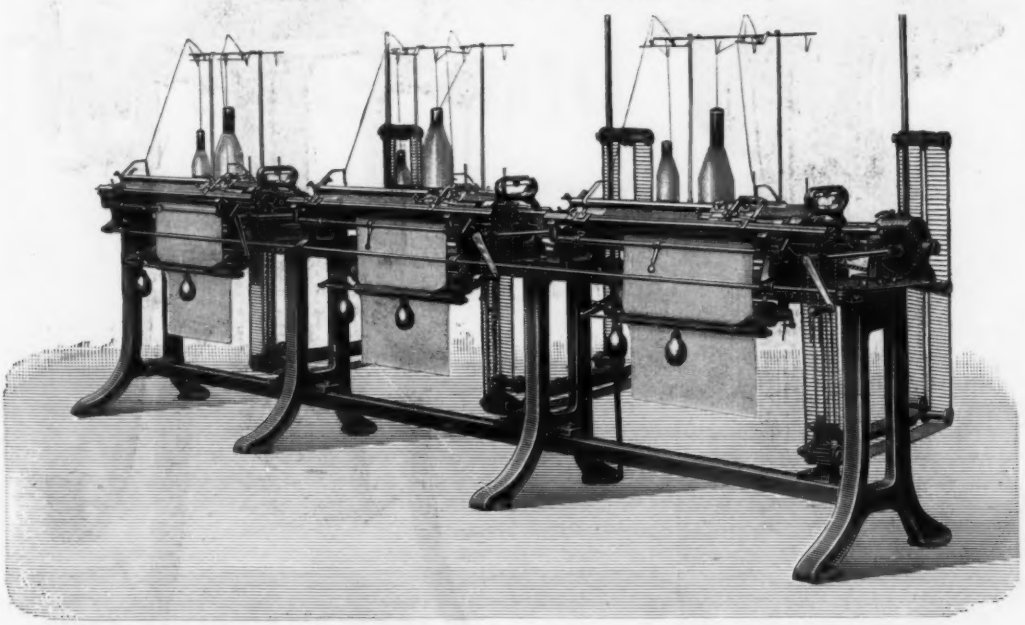

This picture represents one of Seyfert & Donner's full automatic power knitting machines, with chain drive. Each head on stand works independently and can have needle beds of different gauge and width. The machine is fitted with three automatic thread-carriers, two for striping and one for the dividing thread, self-acting lock for welt and royal rib, racking arrangement for whole or half revolution, take-up rollers for endless goods, automatic and electric stop motion.

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If You Want

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MAYO'S

New Full Automatic Knitter.

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A RARE OPPORTUNITY TO BUY.

500 Payne bobbins.
1 Bruce band folder and cutter.
1 Weston & Dennis Press, 32x40 in., } 15 Hollow Plates. }
Lot hosiery stamps, boards, etc.
38 Beattie & Hepworth & Abel loopers.
6 Hosiery presses (lever).
114 Lamb and Grosser sweater machines.
200 Ribbed underwear machines, various sizes.
50 Brinton & Co. ¼ aut. knitters, sizes.
30 Union Special machines, various styles.
1 Rotary fire pump.
1 Buffalo-Blower.
100 feet woven rubber hose, 3 inches dia.
2 paper cutters.
5 Toque machines.
30 Mayo machines. Various sizes.
100 Brooks welters.
8 Fleecing machines. (Nappers.)
98 Brinton & Co. and other make hosiery ribbers.
40-Ribbed shirt machine cylinders and dials, all sizes, cuts and makes.
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25 Standard B. Machines.
120 Paxton & O'Neill and Excelsior Knitters.
1 Back gear screw cutting lathe, 5 ft. x 14 in. swing
1 Newmans watchman's clock, 16 stations.
10 German sweater machines, flat.
Lot of Union Special Sewing Machines.

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We are always in the market to buy good second-hand Knitting and Finishing Machinery.

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FAST
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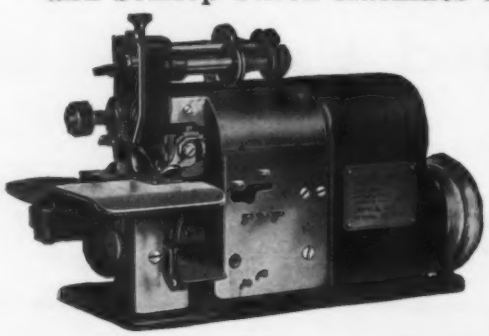
Light Running

High Speed Overseaming, Overedging and Scallop Stitch Machines are



OUR NEW STYLE 60 MACHINE for Trimming and Overseaming in one Operation produces the strongest, best Seam and does it with the greatest economy.

USE STYLE 18 for Horse Blankets. STYLE 17 or 22 for Bed Blankets. STYLE 35 B SHELL, for Necks and Fronts of Rib Goods, produces the most showy, substantial finish.

Send for Catalogue and Samples.

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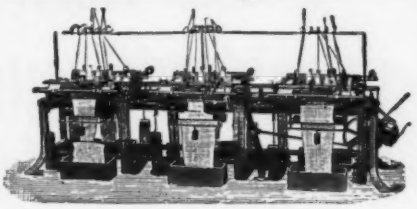
GROSSER Flat Knitting Machines

For HAND power or **Fully Automatic Power Machines.** Most productive and best machines for Sweaters, Jackets, Blouses, Wool Hosiery, Gloves, Mittens, Sporting Goods in Plain, Fancy and Jacquard Work, Shaker Articles, etc. Large stock on hand. Power Machines to be seen in operation.



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For automatic production of **Full Fashioned Hosiery, Fine Half Hose, Ladies' Lace Hose, Fine Underwear;** high speed, large production. All guages and any number of sections, from 2 to 24.

FRENCH FRAMES

C. TERROT SÖHNE, Cannstatt, Würt, famous builders of the best Circular Frame for **Finest Underwear, Fleece Linings, Gloves, Special à-jour** (open work) **Fabrics, etc.**

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For Fancy Goods in largest variety, **Shawls, Capes, Caps, Borders, Fringes, Lace Work, etc.,** in silk, wool, cotton.

SPOOLERS, Paraffiners Finishing Machines, for the knitting business.

Exclusive Agency for the Famous

Julius Koehler DIAMANT OVERSEAMERS, indispensable for all full fashioned articles, **Hosiery,** Gloves, Jersey Sweaters, Sporting Goods, etc.

LOOPERS Double thread Lock-stitch, self-cutting and cleaning attachment. Reliable money saver.

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Samples, Specifications, Prices, etc., upon application.

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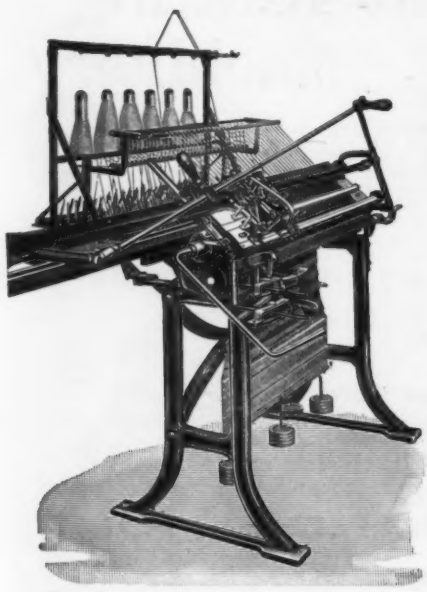

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Knitting and Winding Machines

for hand and power driving, of best quality and perfect construction.

Specialty: Jacquard Machines

for hand and power driving for manufacturing of sweaters and every possible fancy article of that nature.

PRICE LISTS AND SAMPLE ON APPLICATION

The Invincible

Full Automatic.

"The KNITTER that KNITS"

THE LARGEST PRODUCER OF PERFECT WORK.
SIMPLE, POSITIVE AND EASY TO OPERATE.

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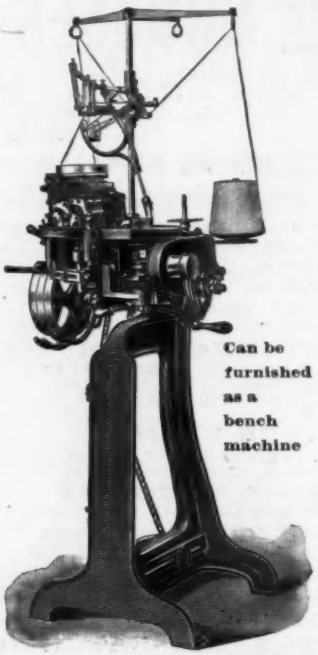
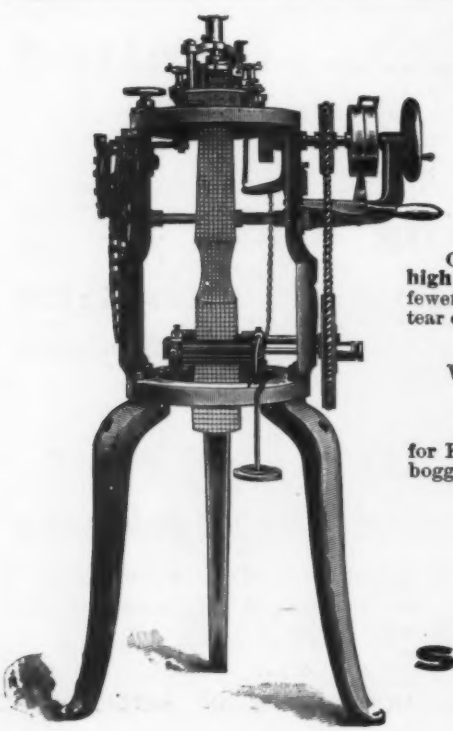


Can be furnished as a bench machine



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Our latest model machinery has been designed to run at very high speed, giving large production. This is accomplished with fewer seconds, less breakage of needles, less jar and wear and tear on machines than has been customary at lower speeds.

We also make Special

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Our Machinery gives large production at low cost and enables manufacturers to meet the market always and make a profit.

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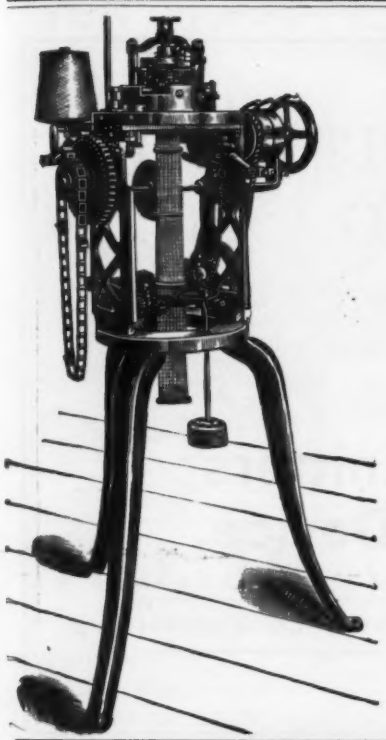

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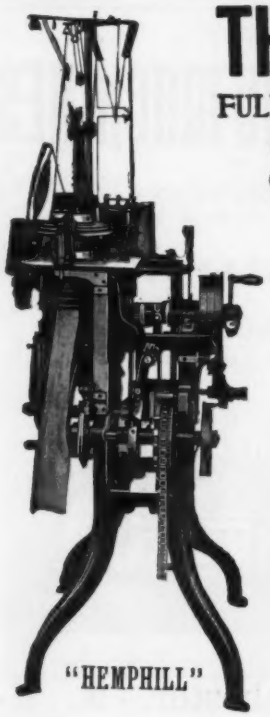
For HOSIERY and UNDERWEAR.

Complete Estimates Furnished. Send for Particulars.

The cut shows our Improved Automatic Ribber with Welt and Slack Course for Half Hose, Tops and Ribbed Legs.



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FULLY AUTOMATIC HOSIERY KNITTERS

FOR MAKING ALL KINDS AND GAUGES OF SEAMLESS HOSIERY

One with **GEARS**, the other with **CHAIN** for pattern mechanism, to meet the various tastes of different manufacturers.

Both used and approved by leading hosiery manufacturers.

Both contain all the well-known essentials demanded of first-class knitting machines.

With these two machines we can supply all manufacturers' possible wants in the best possible manner.

Write us for further particulars and prices.

We also make all kinds of **LATCH NEEDLES.** Many leading manufacturers use our needles and say they are the best on the market. Send us a trial order.

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KNITTING MACHINE AND NEEDLE COMPANY

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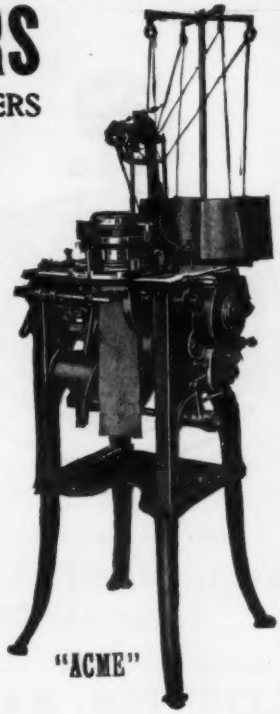

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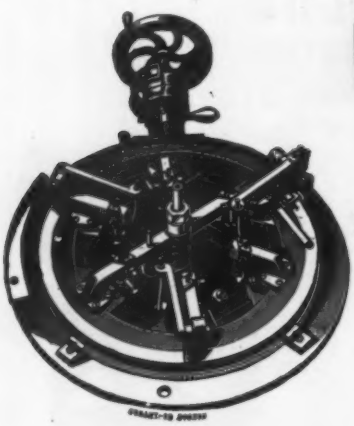
BUILDERS OF

Full Automatic Knitters

With or without **Transferring Device**

ALL SIZES AND GAUGES, 2 1-4 INCH TO 4 INCH



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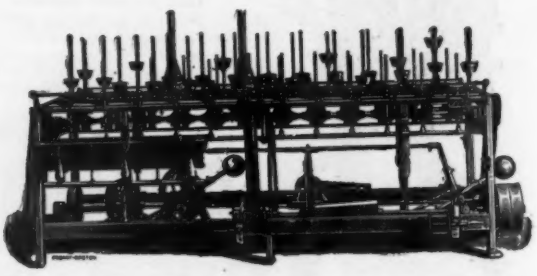
Either plain or full automatic, with stop motions complete. 4 to 24 feeds for

RIBBED UNDERWEAR

Automatic Racking and Striping Machines for Sweaters, Cardigans, Collarettes, Cuffs and Anklets.



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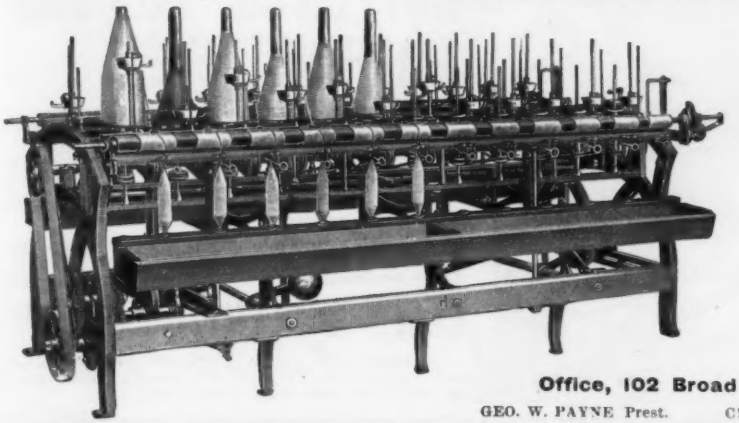
ABEL WINDERS, SEAMERS and LOOPERS.

LEIGHTON MACHINE CO., - Manchester, N. H.

OVER 1,900 PAYNE WINDERS IN USE

By Hosiery Manufacturers,
Wind for Cop, Skein or Bobbin.



Improved

Upright Spoolers,

To Spool from Cop, Skein or Bobbin.

Doubling Spoolers for doubling 2, 3, or more ends into one.

Upright Quillers, Quill from Cop, Skein or Bobbin.

Ring Dresser, Spooler and Reel Spindles, Cop Skewers, Warp, Spool, Spooler, Guides, Bolsters and Stops Made and Repaired at Short Notice.

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For Ladies', Gents' and Children's Goods.
Latest Styles.
Best Workmanship.

Drying Form Boards

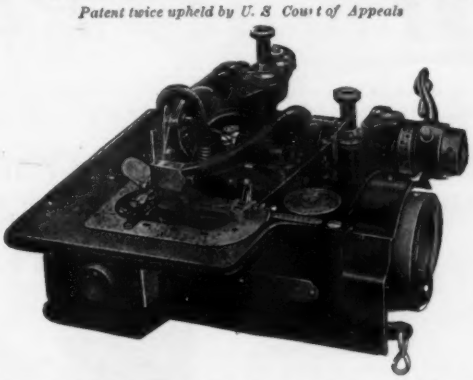
OF EVERY VARIETY.

AN INSTRUMENT OF PRECISION!

"OVERLOCK" MACHINE

(Trade Mark) (Pat. April 5, 1892)

Patent twice upheld by U. S Court of Appeals



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WILLCOX & GIBBS SEWING MACH. CO. NEW YORK

Business Established in 1850.

For TRIMMING, SEAMING (or Hemming or Overedging) and COVERING Raw Edges of Knit Underwear and Hosiery in **ONE OPERATION** at **3000 Perfect Stitches per Minute.**

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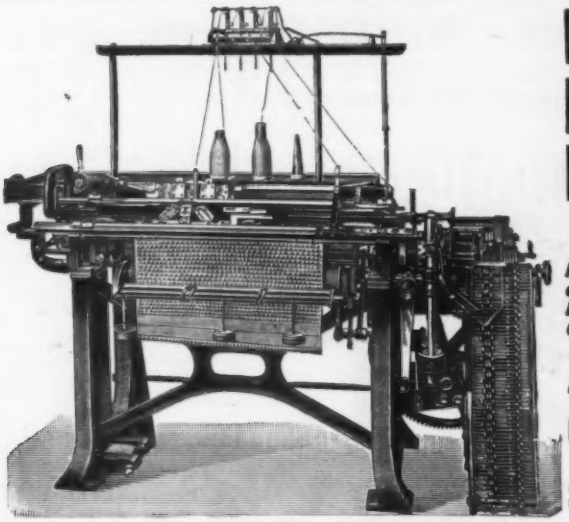
General Offices: 658 BROADWAY, cor. BOND STREET,

NEW YORK, N. Y.

LONDON PARIS MILAN DRESDEN BRUSSELS NOTTINGHAM



Full Automatic NOPPEN & JACQUARD MACHINE

For High-Grade Sweaters, Jerseys, Etc. in latest plain and colored patterns.

Most durable, simplest construction! Easy to operate and adjust! Recognized as the Best in the market. One operator attends to 3 of these machines! Only reliable machine for above articles.

HIGH SPEED! LARGE PRODUCTION! IN USE EVERYWHERE!

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Knitting Mill Machinery and Appurtenances,

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Electric Motors and Dynamos—various makes.

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Insist upon your box maker using

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Our Knit Fabric Cutter

will cut from the roll, knit fabric into any length from 10″ to 40″ at the rate of 100 pieces a minute. The lengths are accurate, the waste is a minimum, the labor unskilled.

We also make a Slitter

for cutting these goods into narrow strips and rewinding same into rolls.

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Manufacturer of Paper Box Machinery. **Ninth above Market Sts., Camden, N. J.**

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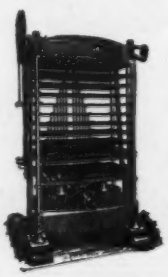

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PLATE PRESS

For Knit or Woolen Goods.

The most reliable machine of the kind on the market.

PRESS PAPERS and FENDERS.

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Established 1868.

The LAMB, LEADER OF KNITTERS,

Original and Still the Best.

Most widely used; being operated in every civilized country in the world. For description, prices, etc., see catalogue.

CIRCULAR MACHINES,
RIB TOP and
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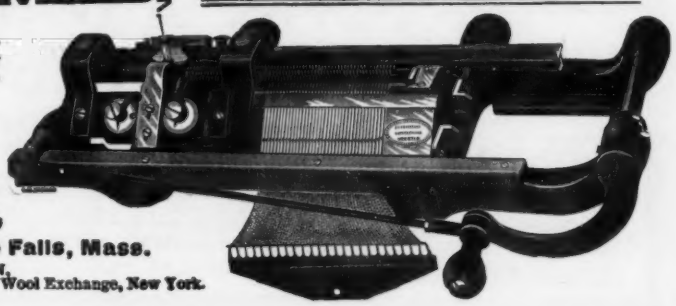

LAMB KNITTING MACHINE COMPANY,

P. O. Box 5888, Chicopee Falls, Mass.

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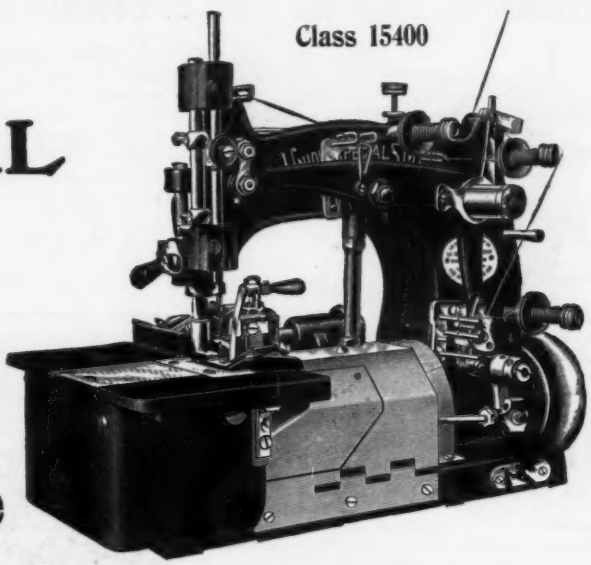
L. D. SANBORN, Room 505 Wool Exchange, New York.

UNION SPECIAL

Single "Interlock" (TRADE MARK) Machine

Class 15400



For Overedge Seaming, Hemming, Edge-Finishing and Ornamenting on Fabrics of Every Kind. Two or Three Thread Stitch.

HIGH SPEED—SIMPLICITY—DURABILITY.

By increasing production of operators, these machines reduce cost. Expenditure for Union Specials always means a profitable investment.

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Full Automatic Knitter

FOR ALL KINDS AND GAUGES OF SEAMLESS HOSIERY.
RANGE ON HALF HOSE AND LADIES FROM 260 NEEDLES DOWN.

3-4 AUTOMATIC KNITTER

With Lace Effects.

Exclusive rights to BROWN'S LACE ATTACHMENT.

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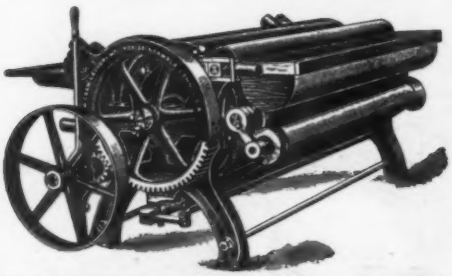
AUTOMATIC IRONING and PRESSING MACHINE for KNIT GOODS.



This machine irons and presses ribbed and flat underwear, giving a fine, smooth finish and most attractive appearance to the goods, not to be obtained in any other way. It does not break buttons. Inexpensive and easy to operate, and has large capacity. Knitting mills using them are greatly pleased with results. This method of finishing is sure to come into universal use. Send for further particulars to

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Patent Single-Stitch

LOOPING MACHINE.

Needle working from the inside, avoiding the breaking of needles and points and picking up the metal.

Single and Double Stitch, or Both Combined.

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BOARDS FOR FAST BLACK DYERS.

HOSIERY FINISHING BOARDS.

BEST WORK. PROMPT SERVICE. PRICES ALWAYS RIGHT.

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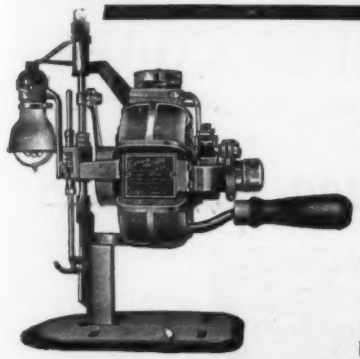

Our Thanksgiving Proclamation

We are thankful that we are in a position to truthfully state that we have this year enjoyed the most prosperous sale-increasing period in the history of our business career. We are also thankful for the knowledge that by the use of our **ELECTRIC CLOTH CUTTING MACHINES** we have made it possible for so many manufacturers of wearing apparel to so greatly reduce the cutting cost of their production.

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OFFICES:—New York, 107 Walker St. Chicago, 245 Jackson Boulevard.
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GAS ENGINES for city or country } EFFICIENT
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Just Patented, a new Stop-Motion

For Spring Beard Needles on Round Heads for making Lace Work on Hosiery, Stockinette, Astrakan Cloth, etc.

Breakage of Thread compels Machine to stop instantly.

Machines can be seen at work by addressing

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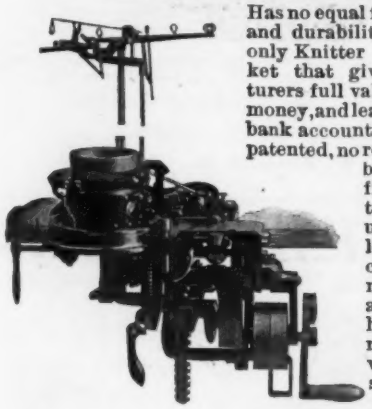
Boss 15/16 Automatic KNITTER



Has no equal for simplicity and durability. It is the only Knitter on the market that gives manufacturers full value for their money, and leaves a swelled bank account. It is fully patented, no royalty to pay; built in sizes from 2½" up to 6"; from 42 up to 220 needles in 3¾" machine. Knits men's, ladies' and children's hose, plain or ribbed. Runs with one single belt. Automatic tension in heel and toe. Send for prices and particulars to

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HARDENED STEEL CYLINDERS A SPECIALTY.

Established 1870. — Incorporated 1890.

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Manufacturers of

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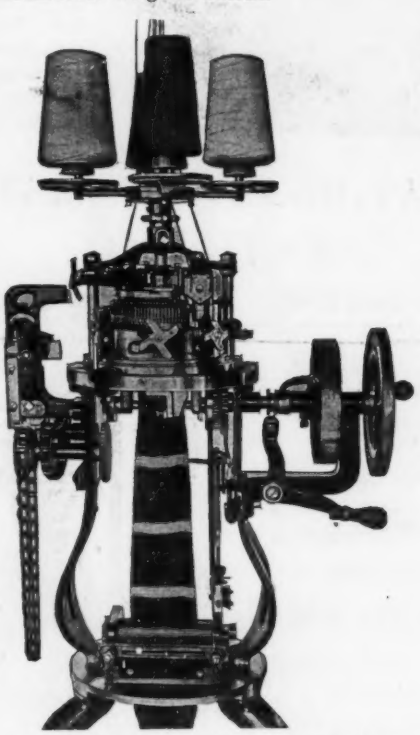
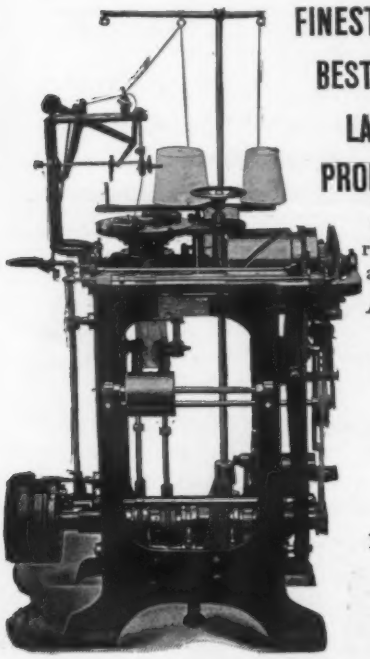


Improved Automatic Toque Machine.

"NATIONAL"

Stands for



FINEST GAUGES
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Greatest Variety of Laces. and Novelties.

All automatic.

Lowest Cost for Operating

Also Rib Knitting Machinery, Overedge, Crochet and Shell Stitch.

NATIONAL AUTOMATIC KNITTER CO.

728 Cherry Street, PHILADELPHIA, PA.

The greatest producing and most perfect

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Manufactured by

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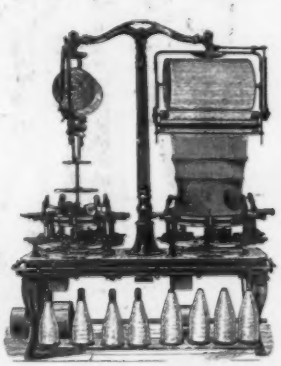

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Flat and Circular Rib, both Spring and Latch Needle, Plain Circular Machines, Lead or Trick Cylinder, **Spring Needle Cylinder Rib-Top Machines** for making Cuffs, Drawer Bottoms and Shirt Borders. **Spring and Latch Knitting Needles, Burr Wheels, Burr Blades, Sinkers, Jacks, etc.**

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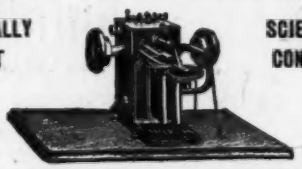

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SAVES TIME—TROUBLE—LABOR

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Both single and double Stitch. with the Patent Raised or Straight Points.

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Investigate what *each make of machine will do*, in quality and quantity of product, the cost of repairs, length of life, etc. Such an investigation will show *you* why so many manufacturers

Buy the Standard F

It is good on the start—and *stays good*

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HOSIERY MACHINES. 508 Ludlow Street, Philadelphia, Pa.

Do you wish to make knit goods as perfect as the French or German, and as rapidly as the American?

Do you want to plait?

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FULL AUTOMATIC MACHINE.

Specially adapted to Platted Goods.

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More yarn changes

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Manufactured by the

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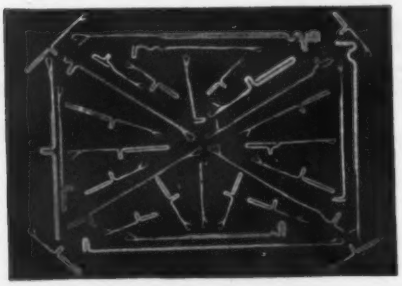
TRY OUR "SUPERIOR" OR SUNKEN RIVET-HEAD NEEDLES

They will save you money.



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EXCELSIOR NEEDLES.

The best Hosiery Needles in the market.

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All Work Guaranteed. MANCHESTER GREEN, CONN.

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Manufacturers of all kinds of

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Manufacturers of

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DENSITY of whirling air in the old Cyclone grinds the material against the casing.

There is **NO GRINDING** in the "1905" and the casing will last a **LIFE TIME.**

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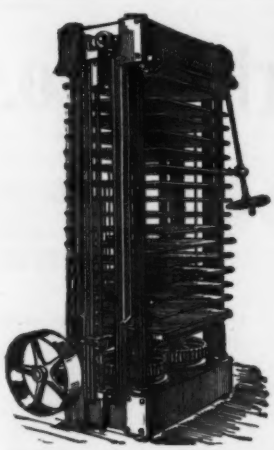

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For Hosiery and Underwear Trade.

For price and particulars address

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Established 1849. Mass. Corp. S. R. MASON, Treas. and Mgr.

MASON BRUSH WORKS,
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Mill and Machine Brushes
For Textile, Paper Mills, Etc.
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MECHANICAL HEATING, VENTILATING AND DRYING, MECHANICAL DRAFT FANS
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The best, cheapest and most satisfactory covering for winder bobbins. Will fit on any style or size.

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TEXTILE MACHINERY

Large lot of Cotton, Woolen and Worsted Machinery of all kinds for sale. Best Prices paid for first-class second-hand machinery.

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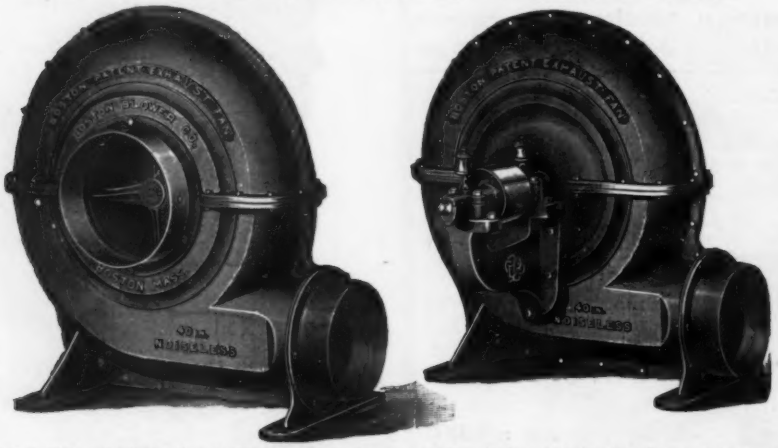
246 Chestnut St.,
Long Distance Telephone. **PHILADELPHIA, PA.**

Boston Wool Exhausters, with Removable Tops.

AS USED IN CONNECTION WITH PNEUMATIC CONVEYOR SYSTEM FOR HANDLING WOOL, COTTON, RAGS, EXCELSIOR, JUTE, ETC.



Inlet Side of Right-hand Wool Exhauster. Pulley Side of Left-Hand Wool Exhauster.

This machine is similar in design to the regular Boston Patent Exhaust Fan, but is fitted with a special wheel for handling fibrous materials, and the top is removable.

This latter feature is especially desirable when handling wet or greasy materials or in handling anything, in fact, which would leave a deposit on the inside of fan, as the entire top may readily be removed for inspection or cleaning without disconnecting either pipe or belt connections.

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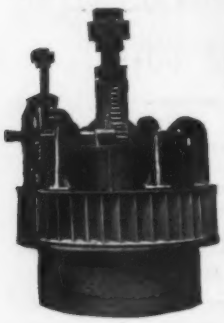

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MOUNT HOLLY, NEW JERSEY, U. S. A.

RISDON CELEBRATED TURBINE
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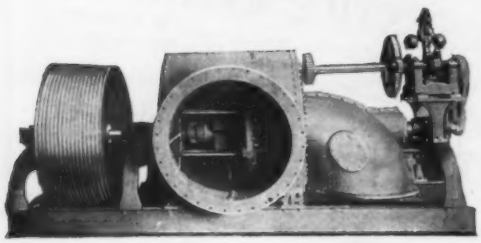
On Horizontal or Vertical Shafts.

These Turbines are recognized as the most effective water wheels made. Your inquiries should come direct to us for this class of machinery.

SAMSON TURBINE



The higher the SPEED of a GENERATOR the LOWER its COST. We can SAVE YOU MONEY if you will use the SAMSON to drive the generator because there is not another turbine built that will attain as quick a SPEED when operating under the same conditions. Write Dept. A-5 for Catalogue.

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A Significant Fact.

70% of our Self-Oiling Engines sold during the past three months have been purchased by concerns who have used Engines of the same type before.

Shall we send you descriptive matter?

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DETROIT, MICH.
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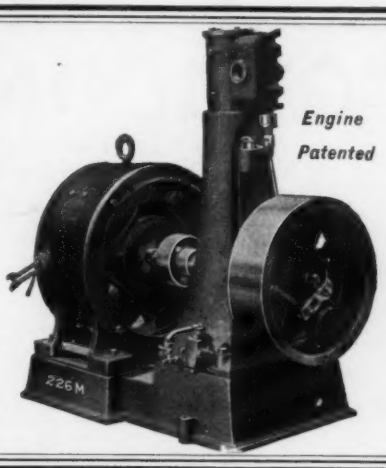

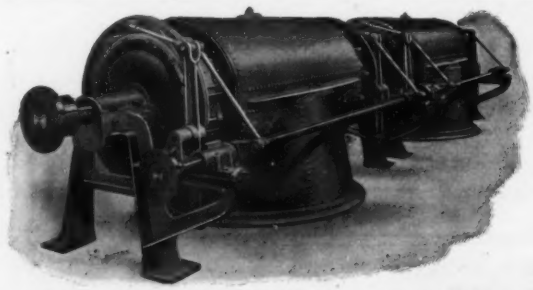

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The High Speed, Power, Efficiency and Durability
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IMPROVED NEW AMERICAN TURBINE
ADAPT IT TO ALL CONDITIONS.
Write for Catalog 18
The Dayton Globe Iron Works Co.
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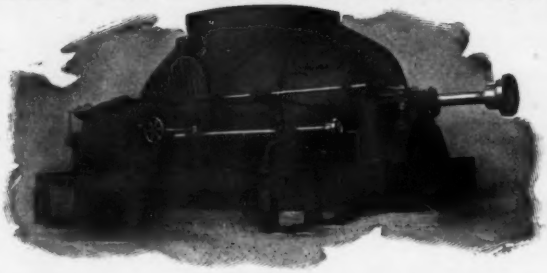
PAIR McCORMICK TURBINES



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Write for Catalogue if contemplating purchase of turbines.

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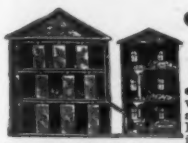

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Patentee and Sole Manufacturer of
THE PNEUMATIC CONVEYOR
For the handling of wool and cotton stock, rags, excelsior, jute and all kinds of fibrous material, wet or dry. Also spool elevators, steam heating and ventilating, and mill work generally. Blower and fan work a specialty. This conveyor is patented. Beware of infringement.
SATISFACTION GUARANTEED. Patented Oct. 15, 1889.
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For Any Kind of Fuel.

Rocking Grates—Dumping Grates.
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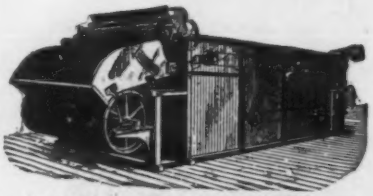
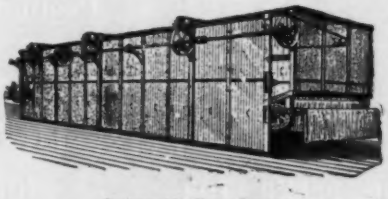
"CYCLONE" DRYERS

For Cotton Stock, Wool Stock, Rags, Yarn, Cloth
Underwear, Stockings, etc.



Automatic Cotton or Wool Stock Dryer.



Automatic Yarn Dryer.

Steel Bladed Ventilating Fans.

Iron Bowl Yarn Scouring Machines.

Complete Carbonizing Outfits for Wool, Rags or Cloth.

THE PHILADELPHIA TEXTILE MACHINERY CO.,

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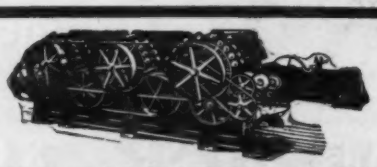
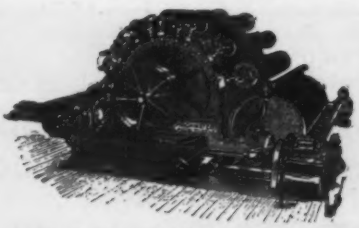
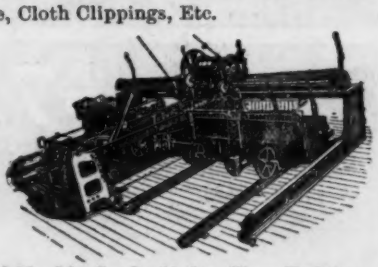


CARNETT MACHINES AND PICKERS

For reducing to Fibre Cotton and Wool Waste, Cloth Clippings, Etc.



WOOLEN MILL MACHINERY



Including Rag, Wool and Burr Pickers, Wool, Worsted and Shoddy Cards, Mules, Yarn Twisters, Warpers, Dressers, Spoolers, Etc.

Complete Equipment for Manufacturing Cotton Batting for All Purposes.

Special Carding and Spinning Machinery for manufacturing Yarn from such low grade stock as Mill Sweepings, Linters, Etc.

We reclothe or furnish new Metallic Toothed Cylinders and Rolls and relagg or furnish new Cylinders for any make of Rag Picker.

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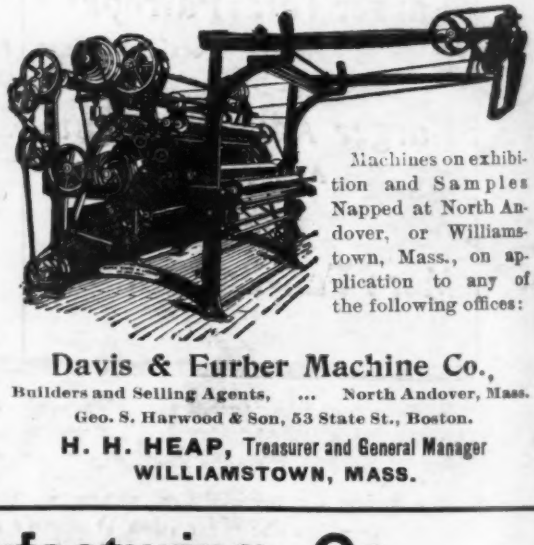

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